AMERICAN GAS JOURNAL

APRIL 1943

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From today's research and planning will come the EMCO Meters and Regulators of tomorrow

Generals Plan Tomorrow's Battle While Winning Today's

ON the far-flung battle fronts of the World, brave United States Soldiers, Sailors and Marines are being directed by military strategists in waging the most scientific war ever fought. This is a war of men and machines. Weighted in our favor is the fact that our machines are products of the same industrial ingenuity that has made America the greatest nation of them all—the men who use them are those who, both by heritage and training, will provide the skilled hands to guide the way to ultimate victory.

Planning ahead is important. Sooner or later the war will end and the Gas Industry and the manufacturing firms who supply equipment must be prepared to meet the changed conditions and ensuing problems that the cessation of hostilities will bring.

That we may keep to the forefront of progress, the research and development program of the Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company has been greatly accelerated. Our post-war planning is beyond the formulative stage. To be sure, the war must first be won, and to this end the productive capacities of our plants are now devoted, but like generals, industry, too, must plan for tomorrow's battle while winning today's. We all must take steps to insure that the things for which we are fighting will be perpetuated in a better peacetime world to follow.

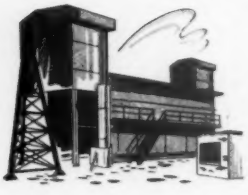
We're Helping Win Today's Battles, Too!

The normal peacetime business of this company and its subsidiaries is designing and building meters, valves, regulators and similar equipment for measurement and control. At present the production of our five factories is entirely devoted to direct war goods and high priority items that contribute to essential military, naval and civilian services.

Meter Company

APR 19 1943

Protecting the life blood of Industry



Prize winning photo by Herbert Kerr, Knoxville Gas Co., Knoxville, Tenn.

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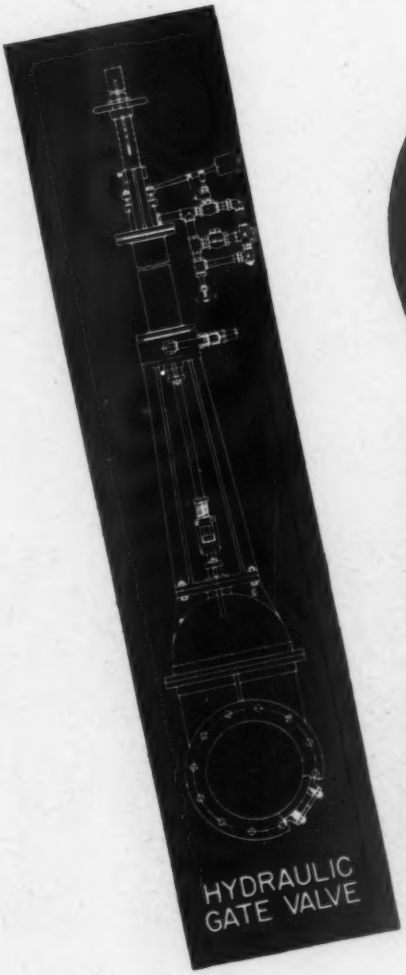
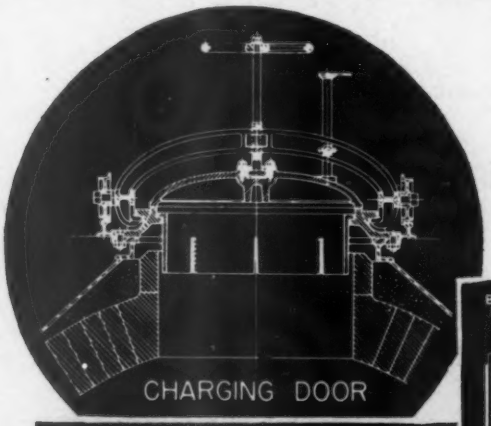
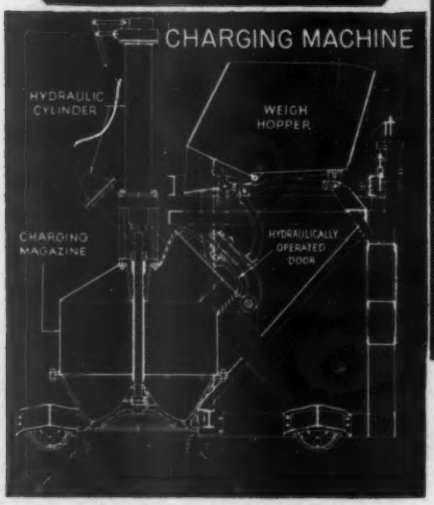


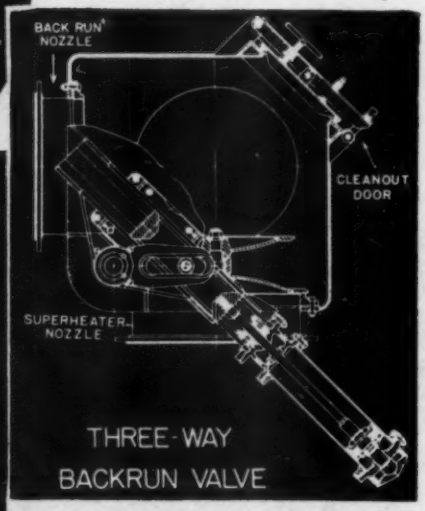
Hydraulic Gate Valve, with automatic stop, permitting opening to any desired degree. Creeper control governs rate of opening.



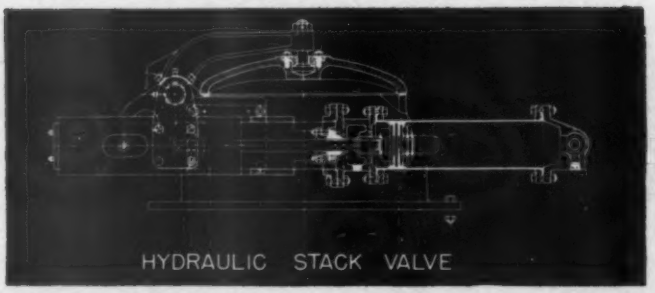
Charging Door. Rolling type allowing unhampered work around charging hole.



Charging Machine. Automatically controlled throughout. Distributes fuel evenly. Built in weigh scale. Cushioned seating for charging door.



3-Way Backrun Valves. Very fast in action. Interior easily accessible. Spray system for reducing carbon and tar accumulation when running on heavy oil.



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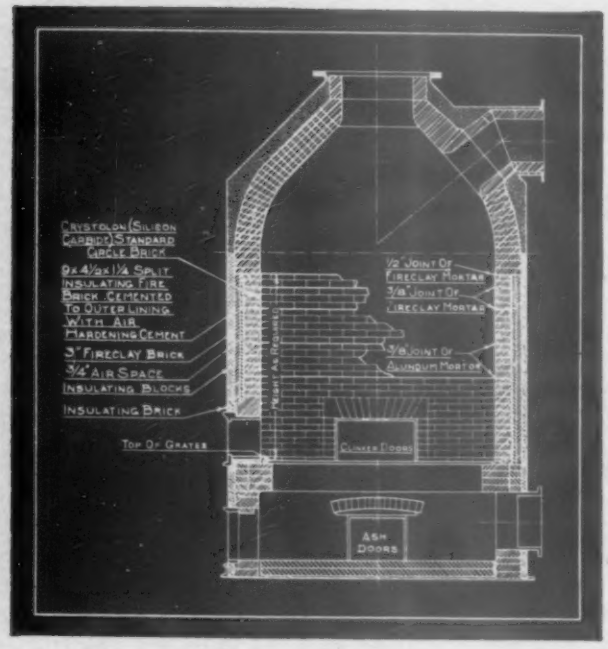
Installation of Super Refractory Brick in Plants Producing Manufactured Gas

The problems of the commercial gas plant superintendent are many and varied due to the erratic consumption of gas throughout the twenty-four hours of each day and the variation in seasonal demand throughout the year.

Then in abnormal times, during steady and continuously high gas consumption, the problem is to keep the generators at work with a minimum loss of "downtime" for repairs, cleaning and other maintenance items.

Production of gas involves the skillful handling of high temperatures accompanied by severe chemical conditions. One of the basic problems in gas production, therefore, is a refractory problem.


CRYSTOLON (SILICON CARBIDE) STANDARD CIRCLE BRICK
9" x 4½" x 1¼" SPLIT INSULATING FIRE BRICK CEMENTED TO OUTER LINING WITH AIR HARDENING CEMENT
3" FIRECLAY BRICK
¾" AIR SPACE
INSULATING BLOCKS
INSULATING BRICK
TOP OF GRATES
½" JOINT OF FIRECLAY MORTAR
⅜" JOINT OF FIRECLAY MORTAR
⅜" JOINT OF ALUNDUM MORTAR
CLINKER DOORS
ASH DOORS

Sectional Drawing of Gas Generator Lined with Crystolon Refractory Shapes

Interior View of Gas Generator Showing Crystolon Doors and Circle Brick

CRYSTOLON (silicon carbide) brick and shapes are aiding many plant superintendents in three specific directions:

1. Increased plant capacity
2. Decreased maintenance cost
3. Long lining life

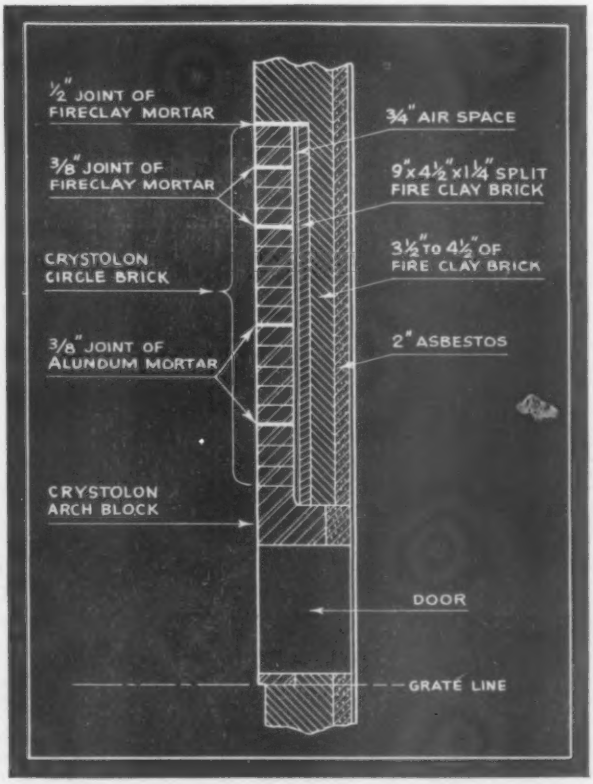
1. Increased Capacity

The reason why CRYSTOLON brick increase plant capacity is that, when used to line the generator, clinkering on production is reduced. These brick present a dense hard surface to the clinkers with the result that the walls are quickly and thoroughly cleaned leaving a larger effective furnace cross-section than would otherwise be the case.

2. Decreased Maintenance Cost

CRYSTOLON brick decrease maintenance cost for two reasons:

a) Periods between major repair jobs are greatly extended so that in



Cross-section of Gas Generator Wall Showing Details of Refractories Including Crystolon Inner Lining

spite of increased first cost the overall expense is reduced.

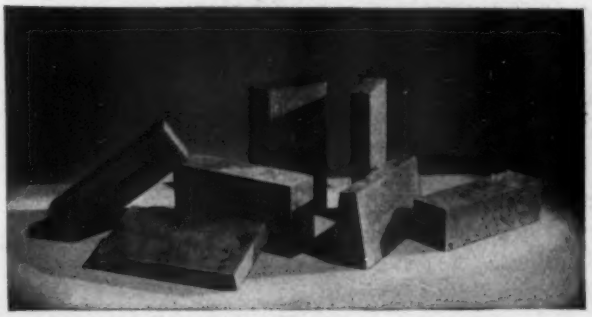
b) Time lost in cleaning is reduced. Due to the nature of CRYSTOLON brick it is only necessary to break the clinker ring which causes it to fall free.

3. Long Lining Life

Fire clay brick when operating under severe conditions soak up slag. When the clinker is broken free, pieces of the brick itself come with the clinker leaving a rough surface for further increased slag adherence and resulting in rapid wear and spalling of the wall. CRYSTOLON brick, however, guarantee long lining life because their dense refractory surface resists the penetration of slag. When the clinker is broken away from the wall, the brick remains unaffected.

The results which may be expected from a CRYSTOLON lining will vary widely depending on conditions of operation. The more continuous the operation the greater will be the expectant life of a super refractory brick. Over 19,000 hours have been attained without major repairs. These hours were amassed, however, over an elapsed period of less than three years. In some cases a total operating time of 5,000 or 6,000 hours might be considered satisfactory.

CRYSTOLON brick linings have the best opportunity to demonstrate their value where service is severe.



Selection of Typical Crystolon Brick

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Wartime Food and Nutrition Program
COURSE LETTER & MEETING OUTLINE
PROGRAM UNIT I
"Eating for Fitness"
PROGRAM UNIT II
PROGRAM UNIT III
"Getting the Most Out of the Foods You Buy"
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3 **"Getting the Most out of the Foods You Buy." A guide to proper handling, storage, and preparation of food.**

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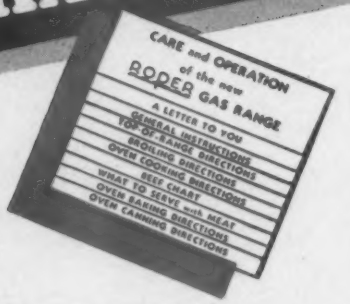
Tell her to HANDLE WITH CARE



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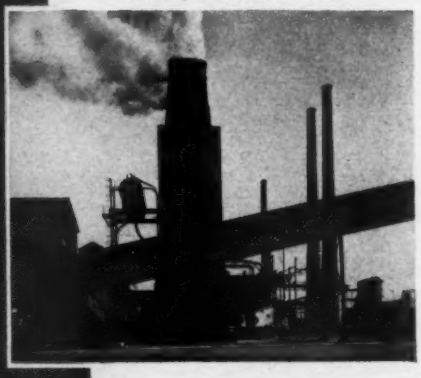
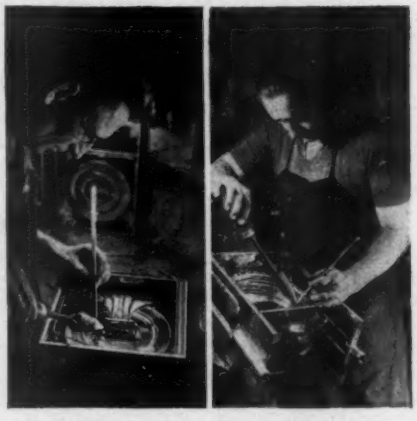


I serve . . .



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APRIL
1943

AMERICAN
GAS JOURNAL

VOLUME 158
NO. 4

Address of Retiring President John West

The New England Gas Association

A Presidential Address is traditionally expected to review the past, appraise the present and point out the path a sound future policy should follow. President West's address does all of these. It is a masterful piece of work. Of outstanding importance is his outline of a program for the future development of the New England gas industry. It is not the program of a dreamer, but of a far-seeing practical man who is not afraid of bigness and who has demonstrated that he can handle big things. —Ed.

John West

OUR EXECUTIVE SECRETARY, Mr. Belden, has just read to us a clear outline of the high spots of the Association's work during the past year. I would like to supplement his remarks by indicating that there has never been a year when the relationship between our gas company members and the Association staff has been as close, as frequent and as important as it has been this year.

We know by the evidence of words and by letters of commendation that our activities have received a high rating, not only in the minds of our own members but also in the minds of various governmental agencies with which we have cooperated extensively and which found us well prepared to cooperate with their efforts to adjust our industry to the war effort with the least delay and inconvenience to the public. *I believe that our past year's activities speak for themselves more strongly than have the activities of any previous year.*

Let me say here and now that we are fortunate indeed to have an Executive Secretary of Mr. Belden's calibre with a staff well trained and competent, working effectively to assist us in these frantic times. I am sure that you are glad to have me say this word of appreciation for their unselfish and untiring efforts during the past year.

The work of our five Divisions has contributed largely to the fulfillment of the requirements visualized by President Young who, in his annual meeting address last year, said:

"I should like to call your attention to the statement of Association objectives, as noted on the inside back page of the January, 1942, issue of the 'Gas News,' and particularly to the fourth article, which reads as follows: 'To promote the development of the gas industry generally to the end of increasing its public usefulness.' All of the objectives of the objectives of the Association are important, but it seems to me that this particular one should be continually borne in mind by all of our members during these trying times. If ever there was an opportunity to demonstrate its public usefulness, it is before The New England Gas Association today. We shall meet this opportunity!"

Since Mr. Young made that statement, every activity of our Association has been directed towards increasing the public usefulness of our member companies. Of course, there have been a variety of activities, of approaches, of problems considered, but the objective has always been the same. The net results have proven most gratifying.

Before I conclude this very brief comment on our activities, I would like to note one change which has taken place generally throughout our Divisions—the adoption of the discussion type of meeting. This change has been very successful because it has made possible the detailed, practical and helpful consideration of many working problems experienced in our various company departments which the presentation of formal papers exclusively did not permit. The extent to which the members have participated in these discussions and exchanges of experiences and the substantial attendance at all Division meetings this past year have shown their value. I am not surprised to learn that the discussion type of meeting has become popular with many other organizations.

Meeting the Fuel Shortage

The fuel shortage in New England was critical but, thanks to the organization of the Informal Fuel Committee of the New England Gas Companies, it did not catch us unprepared. This Committee was organized early in 1942 following a conference of gas company managers called by

President Young. Under the dynamic leadership of Hall M. Henry, the Committee's work has been a strong factor in helping our member companies to meet a fuel shortage which was probably the most severe we have ever experienced. Furthermore, because of this Committee's excellent work in analyzing general and statistical problems, the necessary research and cooperative efforts were undertaken and timely contacts made with the many federal, regional and state agencies and groups whose jurisdiction affected our fuel supplies. An outstanding job has been done by this Committee for our industry and for our government.

Post-War Planning for the New England Gas Industry

One of the most worth-while activities that any association can undertake for its membership is to focus attention upon their relative position within the industry. We all know that certain problems of the manufactured gas industry of New England are different in many respects from those of manufactured gas companies operating elsewhere. They are almost entirely different from the problems of the natural gas companies. Let us, therefore, consider our New England problems first and not attempt to solve the problems of other sections of the country.

There may be some among us who will say, "Let's win the war first" or "We cannot plan now" or "We don't have any time." If there are such men among us, I have not met them. I doubt if there are any because our industry is an old one and we have learned that intelligent planning is always required before changing conditions can be met successfully. Individually and collectively, we have solved many problems in the past but it is my belief that, unless we as an industry prepare now for all eventualities, many of us will find ourselves unable to survive the aftermath of global warfare.

The basic need for post-war planning by industry has been recognized clearly by business as a whole and has found expression in the recent formation of the Committee for Economic Development which has inaugurated a most comprehensive post-war planning program for all industry. Last evening at our Directors' Dinner, we listened to a very interesting presentation of the Committee's work. The formation of this post-war planning activity by business as a whole has been accompanied by the establishment of post-war planning committees by numerous trade associations and many other organizations throughout the country, including both national associations of our own industry.

Although our activities have been almost entirely devoted this past year to furnishing information and to discussions and to making surveys which would help our member gas companies to give the best possible account of themselves in the war effort, our own Association has not been unaware of the importance of trying to visualize and solve some anticipated post-war problems. With this thought in mind, I would like to outline some economic thinking that has been developing within our own Association during the last several weeks.

First, let me briefly refer to the trend of net earnings in our industry. Looking back over the past decade, the trend of net earnings on capital invested in many companies is definitely downward. I have seen statistics which indicate that there has been in many cases little or no improvement in net earnings despite a substantial increase in output. Such improvement as has been shown recently in many companies is the result of business directly traceable to war production. This is apparent when we note that the increase in our industrial output is at a much higher rate of percentage than the increase in our domestic output. The fact that expenses of all kinds have increased substantially is not by any means the whole answer to this downward trend in net earnings. *We have a signpost here that we cannot afford to disregard.*

There is probably not a man in our Association who does not fully appreciate that the fundamental problem now before us is to find ways and means to stop the ebb of the net earnings tide and to start it flowing again in the right direction. In my opinion, it will be an exceptional gas company indeed that can solve this problem by itself in the post-war era. Upon this opinion of mine, there hangs an interesting theme for some post-war thinking and post-war planning within our Association. I will outline it to you.

An Industry's Most Essential Assets

The three most essential assets which any industry or any company can possess are personnel, capital and customers. Progress can be made only as long as industry is able to keep on attracting outstanding personnel, adequate capital and profitable customers. *This fundamental principle cannot be disregarded.*

Take the first factor. Many New England gas executives have said from time to time that we need new blood — younger men, abler men, stronger men, men who have more than average vision, intelligence and courage. Younger men who have a good education and training and who can acquire our industry's technique within a reasonable period.

Generally speaking, that portion of technical school and college graduates found in the upper 50% in scholastic standing contains the future leaders of business in America. In normal times, these young men are interviewed each spring by representatives of many different companies from many different industries—including our own companies. How do our companies compare with other companies in the minds of these graduating classes? How many of our companies offer real, long-range opportunity? Are our companies able to attract their fair share of these most promising young men? If not, why not? Isn't something wrong?

Such young men, year after year, are entering the business structure of our country and their choice of our industry will greatly influence and probably determine the future strength of our business. We cannot escape the fundamental implications and the eventual results of this process because our New England gas industry can become no stronger, no more successful, no more progressive, than the vision and ability of its managing and operating personnel will enable it to become.

Consider the second essential—that of attracting adequate capital. Forgetting temporary war conditions, are our various companies able to attract the capital which they should have for proper development and so that they can meet the changing competitive, economic and productive conditions which they will face? Of course, the art of attracting capital consists in offering something that is basically attractive to capital. The company which cannot attract adequate capital eventually dies. How many of us have really studied this question of capital-attracting ability to the extent that we have found a satisfactory answer to all of our own problems? Have any of our studies led us to wonder if this problem went beyond the ability of any individual company to solve it?

The third essential is attracting new consumers. The attraction of profitable customers in post-war mass markets will depend upon our ability

to sell our product and our services at a price the public as a whole—not just some limited segment of it—can afford to pay and will pay. Regarding our product, we have only a rough idea as to what limitations a sound price range may have under probable post-war marketing conditions. But we know that gas cannot be sold indefinitely and in increasing quantity at prices at which it was being sold in some cases before the war and is still being sold—by our least efficient producing plants. *In all probability, high-cost production plants are doomed.* Thus, some portions of our New England gas industry stand today on the dangerous borderline of extinction. The war provided a temporary stimulation of earnings in some cases. But the war will end some day. Then what? Above a certain price range, gas customers will use other fuels. They will leave us, instead of coming to us.

These three factors of attracting outstanding new personnel, of attracting adequate new capital and of attracting profitable new customers are closely interrelated in that the results achieved in each of these three objectives affects the results obtained in the other two.

If our New England gas companies can continue to attract adequate new capital, this accomplishment will help them to attract outstanding new personnel and profitable new customers. If our companies can continue to attract personnel, this accomplishment will help them to obtain capital and customers. If the companies can continue to attract customers, this development will help them to secure personnel and capital. The reverse of this prescription for progress is that our failure in any one of these three endeavors will hurt us in the other two.

If you agree that these three fundamental requirements will closely govern our success, let us proceed to another point. Let us assume that our present personnel-attracting, capital-attracting and customer-attracting abilities can be improved. I believe that our ability in respect to each of them can be improved. Let us further assume that the many post-war changes will accentuate this need for improvement.

Sweeping Changes Required in the Post-War Period

The question then arises: *"What can we do which will strengthen our abilities to attract these three things that we urgently need and must have, in fact, if we are to survive?* This vital question faces us squarely as we approach the post-war period. We cannot dodge it.

In my opinion, no series of small changes, improvements, or efficiencies—however desirable they may be—will solve the problem. Of course, we shall have greatly improved equipment and appliances. We hope that there will be many other helpful improvements. We can use all of them to good advantage. We need every one of them. However, some development far more sweeping will be required to place our New England gas companies in the best possible personnel-attracting, capital-attracting, and customer-attracting position. I say this because the competitive economic factors are very far-reaching.

Let me be specific. Let's visualize a possible development pattern through which we may help to carve a strong future for the New England gas industry—so that we will be ready to do business under post-war conditions wherein pricing will be a vital factor with all industry.

First, I believe that it would be highly desirable for most of the New England gas companies to be interconnected so that present, high-cost, producing plants may be eliminated entirely and so that the benefits of diversity and of the most economical production costs may be spread more uniformly throughout this area.

Second, I believe that we should introduce one, standard, uniform type of gas throughout New England.

Third, I believe that our New England gas industry should tie more closely into the chemical industry in a variety of ways—one way being the erection of one or more large chemical plants at strategic locations, which would have economical and flexible gas production and by-product utilization and disposal facilities of substantial capacities.

Fourth, I believe that we should investigate promptly the practical possibilities involved in new and changed production and distribution methods. For instance, consider only three brief illustrations: the possibilities of plastic mains at one-third of the cost of the pipe we have been using and with desirable qualities not possessed by our present type of pipe, the possibilities of enriching gases without the use of oil, and the possibilities of gas dehydration which may permit the laying of gas mains above the frost line.

Immediately, these possibilities suggest many production, transmission, distribution and utilization changes and probably also various legal and regulatory changes. For instance, we shall need the cooperation of our six state commissions, of our six state legislatures and of various federal agencies to facilitate many details in achieving the goal just outlined. This goal, by the way, suggests that, in my opinion at least, the New England gas industry stands on the threshold of truly momentous changes!

Some of you are probably saying to yourselves that such a proposed pattern for revamping our industry in the future is radical and far-reaching, that it presents many problems difficult of solution, that its achievement would require much time, thought and money. I agree with you. But I indicated several moments ago that I felt that the road which our New England gas industry must travel to place itself on a strong personnel - attracting, capital - attracting and customer-attracting basis in the post-war world now being evolved will not be a road that can be travelled safely in our present conveyances—patched and oiled by a hodge podge of small improvements or economies or efficiencies.

Steps Being Taken Toward Study of the Problems Involved

Quite recently, I invited several Association directors to meet with me informally at Boston. I outlined this picture to them. The response was very encouraging. We had a most interesting discussion.

I then requested Mr. Belden to call a meeting of the Association directors which was held on March 12th and I placed this idea before our Board. I proposed that the Association directors authorize a committee of the Board to study the desirability of initiating a comprehensive survey of this vital question of placing the New England gas companies on a stronger economic basis through an extensive interconnection among companies, through a tie-in with one or more chemical plants contributing gas as a flexible by-product and through new production and distribution methods.

I suggested to the directors the great help which the achievement of this goal would bring—namely, a constant, a flexible, an adequate and an economical supply of gas throughout the New England territory at all times—including periods of peak-load conditions. I mentioned the waste which exists where many, separate, individual companies must maintain certain idle emergency equipment which is seldom used except for a relatively few days each

year. I contrasted this present condition with the possibilities for economical and flexible operation inherent in a system producing, transmitting and distributing gas of standard quality with every modern facility, including chemical absorption of by-products and chemical production of by-product gas to augment supply and to overcome that barrier to further progress towards increased efficiency—the simultaneous peak period.

In addition, I explained that all of us must be realistic about this proposed revamping of the present operating pattern of the New England gas companies, in that some of us might be temporarily, at least, financially hurt by its achievement. I added that I felt that the eventual financial loss which many of our gas companies might suffer, if some such basic pattern were not achieved, would be far greater than if it were achieved. Furthermore, I emphasized that I felt that the period of time available for its achievement was not unduly long and that delay could prove far more costly than we might now realize.

The final point which I stressed was that this basic pattern not only seemed sound but that, if we ourselves did not see its pressing economic and social inevitability, others with supervisory and regulatory powers—who may prove more responsive to post-war trends of consumer needs than we—would see it and take far-reaching action which might not be entirely to our liking.

This matter was further considered yesterday at the meeting of the Association directors who, by the way, represent more than 81% of gas meters in New England. The points which I have just outlined and many other interesting ones were discussed. I am glad to report that the directors authorized an immediate start on this project by appointing a committee to take the first steps looking toward a camprehensive survey of the problems and possibilities involved.

The new committee will discuss ways and means of sponsoring and financing a comprehensive survey by some outstanding engineering organization or group of selected individuals covering all possible major efficiencies and improvements which can be made available to the manufactured gas companies of New England. Incidentally, this proposed survey will tie in with the general program of the New England Regional Committee for Economic Development and with the activities of various interests and communities in New England to strengthen the industrial life of this area. It should also complement in some ways the A. G. A. and the A. G. A. E. M. post-war planning activities.

I cannot fully appraise the import of a pattern such as that which I placed before the Association directors but I did want to direct a searchlight on its possibilities because it seems quite clear that some pattern built from such an outline will prove to be a pressing economic and social necessity in the relatively near future. Let us ascertain both the implications and the complications inherent in such a pattern. *A study of the implications may well give us courage to solve the complications.* Let us not make the mistake of seeing only the possible complications and of overlooking the pressing implications. *Let us balance them intelligently.*

Our industry must have clear-cut and favorable prospects to attract the personnel, the capital and the customers which we wish to attract—which we must attract to survive over the years. *We must make our prospects what we want them to be.* It is up to us. It is not up to anybody else. We can't do business in a post-war world if we aren't ready to do it there. That is why we must start now to get ready to do business then. There is much to be done before we shall be ready.

Favorable Prices for Gas Essential

There is little question but that our industry has established and enjoys general favor in the public eye—subject, however, to one qualification, the price of our product. The post-war markets will be largely mass markets. Millions of people like our product and will use it but it must be priced favorably in relation to competing products and also, more broadly, in relation to many other kinds of products. Many new products will be available. Developments already indicate that competition for the consumer's post-war dollar will be even more intense than it was for the consumer's pre-war dollar. Don't forget that the war-production experience of many companies has disclosed new efficiencies, some of which are nothing short of amazing. Pricing policy will certainly be a prime post-war consideration in every industry.

We of the New England gas industry must start planning together now for our mutual future because what affects one of us does and will continue to affect all of us. We cannot afford to be isolationists with respect to such a fundamental future operating pattern as I have outlined. We cannot sail all of our ships singly on post-war economic seas but must go forth in a convoy. If we are going to attract the three things that we want and must have for the success of our industry — personnel, capital and customers — we must help each other and be helped by each other. How can any one gas company by itself expect to achieve the total efficiencies which should result from the operating pattern just outlined?

Gentlemen, we are not engaged in an industry that is on its way "out." Under proper leadership and working according to a rational economic plan, we are engaged in an industry that is very much on the way "in." We must be ready to do business after the war — mass-market business on a scale which we cannot possibly handle unless and until we develop a logical, economic plan in which all of us can cooperate. If we do not do this for ourselves, you may be sure that it will be done for us. Must we not be prepared to supply our part of the economic necessities of a public which is already conscious that it has the right to expect that henceforth our natural resources be converted into the best products and services possible and made available at prices within general economic ability to pay?

After all, there is significance for us in the social security report which Sir William R. Beveridge made to the English Parliament recently, in the expressions of Sir William Temple, Lord Archbishop of Canterbury, and more recently in the proposals of the National Resources Planning Board which President Roosevelt has presented to our own Congress.

We Americans have both ideas and common sense. We know that the one is of no use without the other. But the combination of these two Yankee qualities is unbeatable.

All of you who saw service in the Tenney companies probably remember the motto of the Tenney Service Association. It applies very directly to our present problem. It was "Co-operation — Efficiency — Progress." If we choose to intensify the first two of these three qualities in our industry, we shall have the third. In that event, none of us need fear the post-war period. On the contrary, we may anticipate with confidence the leading part which our New England gas companies will play in it.

Fortunately, it is a choice which we ourselves can make. Our opportunity is now. We must make a choice.

Presented at the 17th Annual Business Conference, New England Gas Assn., Boston, Mass., March 18, 1943.

New England Manufactured Gas Industry

By

Hall M. Henry

Chairman New England Gas Companies
Informal Fuel Committee

THE NEW ENGLAND gas companies sent out 51,568,000,000 cu. ft. in 1942, vs. 47,234,428,000 cu. ft. in 1941 or 10% more gas in 1942 than in 1941. The estimate for 1943 is 56,615,437,000 or 9.8% increase. Some of the companies sent out 30% to 35% more gas in 1942 than 1941. These larger increases were due to sales to War Industries where gas is in great demand to meet the exacting heat treating requirements of war products. They are also due to the larger gas usage for home heating and kitchen heating. These latter uses have grown steadily in the years before the war and represent for the New England gas companies as a whole approximately 20% of total sales. In some individual companies where, before the war, intensive efforts were employed heating sales represent 40% of the total sales. That heating sales were not considerably larger is due to the fact that most gas companies discontinued heating sales in the Spring of 1942 in order to conserve their manufacturing capacity for war industries.

Gas Companies Reach All Time Daily Peak

The gas companies experienced their maximum peak day send-out of all time during the cold snap that occurred the week of February 15th. On the coldest of these days the peak daily load was 251,877,000 cu. ft. compared with the highest peak day of last winter of 204,396,000 cu.ft. or an increase of 23.2%. The 1943 peak is estimated at 260,509,000 or an increase of only 3.4%. Some individual companies had peak daily loads 75% greater than they had ever before experienced. These enormous daily peaks were carried with a minimum of inconvenience to gas customers. In only five towns were the daily peak loads in excess of the company's ability to serve. In all but two instances, the gas companies were able to weather the peak loads through appeals for voluntary reductions in gas usage—and for heating customers to set back their thermostats. In the case of only two companies was it necessary to reduce the gas consumption to war industries a 30% reduction being required for a day by one company and to the extent of 50% for a period of two days by the other.

No Shortage Due to Lack of Fuels

In no case was it necessary to curtail gas usage because of a fuel shortage although some few companies got down to a dangerously low level on enriching oil and in one instance a company had to get some oil from another utility company. The excellent record of the gas companies in not having to reduce deliveries of gas because of lack of oil is due to the precautions taken. Among many steps taken by the New England gas companies was the formation of an Informal Fuel Committee in March, 1942, to coordinate their fuel problems to war conditions. Through this committee the different governmental or industry or voluntary bodies concerned with the fuel situation were contacted and the requirements and needs of the gas companies fully discussed. Thus these groups learned of the serious consequences attendant on a gas plant shut down. The Ordnance Department went on record as saying that "If there is insufficient oil to meet both war industry and gas company needs—then the oil should go to the gas company. If a gas company were shut down even for 5 minutes it would require several weeks to get gas back on the system even though oil were available to the company one minute after the shutdown. Not just one war industry would close but all industries using gas plus depriving 80% to 90% of the war workers a means of cooking their food." Because of this potential hazard every effort has been expended to keep the gas companies supplied with oil and other fuels. Furthermore, the companies themselves got together additional oil storage tanks to give them a larger margin of safety on oil supply. At the beginning of the war, the gas companies could normally store about 20 days supply. Today any New England company can have available a two to three month winter oil supply through an oil storage pooling arrangement. It is planned to utilize this fact to the fullest in preparing for next winter's fuel needs. The gas enriching oils used—1942—1,997,600 barrels; 1941—1,883,800 barrels, or an increase of 6%.

Hall M. Henry

Gas Conservation

The New England gas companies through their Informal Fuel Committee set up a gas conservation program detailing the many ways their customers could reduce the use of gas. This program was translated into a gas conservation campaign made up of direct mail folders together with newspaper ads on the need to save gas and how. This program with appropriate modifications was approved by the War Production Board and adopted by the American Gas Association for the gas industry throughout the country.

Advertising Cuts Gas Used for Heating 20% to 30%

Through conservation programs, the use of gas has been substantially reduced. A study of heating customers indicated a 20% to 30% gas saving has been effected over the prior year. Similarly the domestic use of gas showed a modern reduction per degree day in spite of other factors tending to increase usage, such as the fact that meals are eaten at home because of gasoline rationing and the government's nutrition program calls for foods requiring more gas usage. These conservation programs developed and paid for by the gas companies have been the means of reduc-

ing the use of oil, coal and coke (fuels used to make gas) plus enabling the companies to meet the greatly expanded demands for gas in the industries where individual plants have doubled, trebled and in some instances increased load 100 times. Had it not been for the early foresight on the part of the companies in adopting conservation measures and the splendid cooperation of their customers in reducing their gas usage, there might have been other companies in a position where they would have had to curtail gas in war industries and the degree of curtailment would have been more serious in those companies that had to curtail

How Gas Companies Are Helping the Oil Situation

The gas companies are helping to relieve the over-all oil situation here in New England by supplying gas for certain war plant loads formerly on oil. In most instances these former oil loads are taken on with a provision that oil be used during peak winter months when gas demands are greatest. By using gas instead of oil —fewer gallons of oil have to be brought into New England, in some instances 40% less. The reason for this is because the gas companies use less oil to make the necessary quantity of gas to replace oil than would be used directly in the form of oil. The Informal Fuel Committee prepared a complete report setting forth the savings in oil when gas is used instead of oil for certain heat applications. This report was submitted to various governmental agencies.

Limitation Order

The New England gas companies were among the leaders in pressing for a Manufactured Gas Limitation Order—so as to prevent a general stampede to gas which was developing because of fuel shortages and which if allowed to develop would swamp the gas company's facilities and thereby jeopardize the war effort. This Limitation Order has proven most beneficial to all concerned.

What of the Future

The gas companies have weathered one of the worst winters in a good many years. They have in all but a few instances met the rapidly expanded war industry gas load. They have also met the unexpected loads caused by consumers using gas to make up for deficiencies in other fuels. All of these factors placed an enormous daily peak on their gas system. Because they have conquered these emergencies they look confidently to the future. The experience this winter has uncovered a few weaknesses most of which can and will be corrected by next winter. Since no new loads can be taken on without War Production Board approval, the future gas loads should be met to the fullest extent and no critical shortage need occur provided adequate fuels are available. Every effort will be made to accumulate sufficient fuel supplies during the summer months to carry over the heavy winter months.

It is believed therefore that the New England gas companies will be able to fully discharge their responsibilities to their gas users and thereby continue to make its contribution to the war effort. The companies believe in return that their gas users should continue to use gas conservatively thereby contributing to the over-all fuel situation. With both the company and gas consumers doing their full part, there is every reason to believe that gas will be available in the future for those uses and to those customers that are now being served plus those that will be permitted to be served under the Manufactured Gas Limitation Order.

High Lights
The New England Gas Association
17th Annual Business Conference

"The Association's Year",—Excerpts from a Report by Clark Belden

Executive Secretary.
The New England Gas Association:

A One-Day Conference
Time: March 18, 1943.
Place: Hotel Statler, Boston, Mass.

BECAUSE of war requirements, the Program Committee planned a one-day conference this year instead of the customary two-day conference. The papers of rather direct interest to the members of the several Divisions, which were customarily presented at the Thursday afternoon and Friday morning sessions were omitted this year. The appliance and equipment exhibit, the home service luncheon, and the special function that was often held on Thursday evening were also omitted. Nevertheless the registered attendance was 345, a surprisingly high figure considering the conditions.

"Thus far, we have issued 498 war program releases affecting the gas companies. These have covered the orders, amendments, interpretations, revisions, rulings and suggestions of many governmental agencies —including WPB, PAW, OPA, ODT, OCD, OEM, WMC, and others."

"Our cooperation with various official bodies summarizes roughly as follows:

"First, this cooperation was extended to WPB, the Boston Ordnance District of the War Department, the Selective Service Division of the War Manpower Commission, the OPA, the National War Labor Board, the Department of Labor, the U. S. Civil Service Commission, the Treasury Department, the Office of Defense Transportation, the First Service Command of the Army, and the Office of Civilian Defense.

"Second, the cooperation extended to one or more of these agencies included:

(1) The sponsorship of an extensive survey of gas fuel requirements in New England war-production plants for the Boston Ordnance District;

(2) The holding of all-day company managers' conferences to consider many war operating problems including the gas limitation order, conservation advertising, prospective fuel shortages, and operating methods;

(3) Supplying a variety of factual information covering the New England gas industry;

(4) Invitations for speakers to address our Divisions and other groups;

(5) The promotion of salvage, bond-sale, fire prevention and other programs;

(6) Supplying information upon request regarding the experience of various gas industry personnel under consideration for certain governmental positions;

(7) The distribution to our members of material embodying governmental requests for industry's cooperation on various matters;

(8) Working on a proposed draft of a gas limitation order;

(9) Supplying our members with lists of considerable used operating equipment available for purchase;

(10) Supplying our members with the various rulings of the Wage and Hour Division."

"The war has had still further effects. The production of gas appliances is no more. Most manufacturers are engaged in war production. This is largely true of companies manufacturing operating supplies. Last spring, our directors were interested in the question of the continued support of our 105 manufacturer company members. These members had proved extremely loyal to our Association in peace times, but here were entirely new conditions. In view of the very close budget under which our Association operates and in view of our close mutual interests, it was easy to understand this interest of the directors.

"After some study, a quota was computed covering the continued support which might reasonably be anticipated. This quota was not a low one. It was thought to be too high by several Association directors, although others felt that it was as near right as could be estimated. It should interest our members at this annual meeting that this "quota of anticipated financial loyalty" of our manufacturer company members made last spring did not prove to be a very good one. Actual results to date show that the quota has already been exceeded by 23%. The manufacturer company members of this Association have clearly shown their continued loyalty to us and their vision and their confidence in the future of our Association and of the New England gas industry."

"It will also interest you to know that our 75 gas company members have continued their usual financial support 100%."

"The Gas Industry Today",—Excerpts from an Address by Alexander Forward

Managing Director,
American Gas Association:

"The gas industry is in all respects very much at war. Most of our companies are called upon for Herculean efforts to supply the demand for gas for Government agencies and for the war industries and to maintain essential civilian services upon which our country's morale so largely depends, and it is striking that after years of study and effort to increase our sales we are besieged with the most urgent demands for more gas, coupled sometimes with threats if we don't produce and distribute. War agencies in Washington and elsewhere are moving heaven and earth to enable us to secure sufficient supplies of gas-making materials to meet all the demands, often largely in excess of our supposed capacity."

"Never before have all official agencies and the public generally been so thoroughly convinced of the fact that gas is one of the basic and essential industries of our Country."

"Post-War Planning From The Manufacturers' Standpoint,"—Excerpts from a Paper by Colonel Willard F. Rockwell

President, Association of Gas Appliance & Equipment Manufacturers
President, Pittsburgh-Equitable Meter Company
Director of Production, U. S. Maritime Commission
Executive Committee, Army and Navy Munitions Board

"Fighting in this war will probably end very suddenly, but it may be followed by an armistice lasting several years. It is fairly safe to assume that the end of fighting will bring a return to normal procedures and release of Government controls of our national economy."

"War means depression for some, and maximum production for others. Some products immediately become critical needs for the armed forces, while others must be eliminated so that the labor and material which they require can be diverted to more essential uses. Some manufacturers who are producing non-essentials can quickly convert to the production of war material. We know from history that some wars have been followed by long depressions, while other wars have been followed by great expansion of industry and commerce."

"Roughly speaking, all of our domestic production can be placed in one of four classifications. *First,* there are the producers and industries which have been expanded far beyond any former peacetime requirements, which, therefore, must either create new markets for their products or enter into cost-cutting and price-cutting that will eventually eliminate the weaker and less efficient producers and manufacturers. Carbon steel is probably in this classification, but it is quite possible that, with greater efficiency, relative prices may be low enough to use steel in prefabricated houses, which will create a great new market.

"In the *second* class are such products as aluminum and magnesium. Their former peacetime use was only limited by the cost of production. Under Government stimulation, both have been expanded and many new methods have been introduced which will further reduce their cost. The world has many applications for this increased production. Many of the articles now made of cast iron will be made of aluminum or magnesium if the cost is as low as predicted by experts. Plastics are also in this classification, as there are many articles which can be made cheaper and better now that plastics are available in large volume.

OFFICERS OF NEW ENGLAND GAS ASSOCIATION

Front row—left to right: H. M. Henry, Negea Service Corp., Cambridge (1st vice president); John West, president, Worcester County Electric Co., (past president); N. B. Bertolette, president, The Hartford Gas Co. (President elect). Back row, left to right: D. S. Reynolds, vice president and engineer Boston Consolidated Gas Co., (2nd vice president); Clark Belden, Boston, (executive secretary); E. H. Eacker, vice president, Boston Consolidated Gas Co. (Treasurer).

1943-44 Officers and Directors of The New England Gas Association

Elected at 17th Annual Business Conference at Hotel Statler, Boston, on March 18th

Officers

President—Norman B. Bertolette, president, The Hartford Gas Co.; *1st Vice President*—Hall M. Henry, Negea Service Corp., Cambridge; *2nd Vice President*—David S. Reynolds, vice president and chief engineer, Boston Consolidated Gas Co.; *Treasurer* — Earl H. Eacker, vice president, Boston Consolidated Gas Co.; *Clerk*—Clark Belden, executive secretary, The New England Gas Assn., Boston.

"In the *third* class there are utility and household appliances and equipment, and thousands of items classed as semi-luxuries, the production of which has been curtailed or eliminated during the war, and for which an enormous demand has accumulated. Manufacturers who formerly produced these articles may be engaged in war work and may never return to their former production. Others are designing better products and preparing for greater production at lower costs, so that they may use their expanded productive capacity to fulfill these accumulated demands.

"In the *fourth* class are products which were retarded in development because they required large sums of money; and as the money was not available before the war, they were not brought into production until required for war needs. With money provided by the Government and production stimulated by the requirements, some of these products may revolutionize modern life as we know it. Synthetic rubber was not generally developed before the war because it could not be produced economically in small volume and could not compete with natural rubber. Neoprene and Thiokol were used at higher costs where they were superior to rubber in resisting oil damage and heat."

"During the war, enemy submarine action has required construction of large oil lines from Texas to the East Coast. These oil lines probably cannot compete with tanker transportation from Texas to the East Coast, so eventually tankers will resume their task and the oil lines may be available for natural gas. The natural gas formerly used to produce carbon black may be diverted to these pipelines. Communities which have no gas may be served with natural gas, and more distant communities which have manufactured gas plants may use mixed gas.

"Without attempting to prophesy the final result, it is absolutely certain that there will be a very radical change in the relative cost of wood, coal, gas, and electric power. Some experts say that lumber is too valuable for building uses; others say that petroleum is too valuable to use as a fuel. It is claimed that petroleum by-products which are now being developed, combined with increased demand for small power units, will remove petroleum from the purely heating market. It is estimated that there are fourteen billion barrels of oil available, but that it cannot be removed by present methods in less than fifty years. The cost of exploration and of development may increase rapidly. Oil may be prohibitively high for many present heat uses, simply because it has many more efficient uses or essential requirements to fill.

"My own study of the problem has convinced me that the gas industry, both manufactured and natural; is going into the greatest expansion it has ever known."

"Some authorities, who believe the war will end very soon, hesitate to express such an opinion for fear that the Nation will relax in its efforts. There are signs that the Axis is desperately short of many war necessities, and we know that the Axis countries are surrounded by enslaved nations which will rise in terrible fury at the first sign of Axis weakness. Our greatest task may be to bring peace between the Axis and its present victims.

"We can be proud of the part that the gas industry has taken in promoting the war effort by its efforts to expand its production when necessary, and by its willingness to sacrifice production which interfered with the war effort. None of us can escape this conflict without scars; but we can, and should, plan so that our industry may take its rightful place in that brighter future, which it is our duty to expect, regardless of the misfortunes which loom so ominously these days."

"Petroleum Industry Developments And Their Effect On The Gas Industry,"—Part of a Paper by E. Holley Poe

Director of Natural Gas and Natural Gasoline, Office of Petroleum Administrator of War, Washington, D. C.

"One picture is worth 10,000 words. The chart shows the deliveries of petroleum products into District No. 1 from 1941 through 1942 and for January 1943 by tank car, pipeline, barge, and tanker. Prepared by the Transportation Committee of District No. 1 (New England and Eastern States), it was recently presented by Mr. W. A. Jones, Chairman of this Committee, before the Petroleum Industry War Council in Washington. Tanker movements began to be curtailed in late 1941 and by the end of 1942 had dwindled to a fraction of the total shipped. Tank car movements almost invisible in 1941, at 40,000 barrels per day, jumped to 800,000 bbls. per day by the middle of 1942, and by September 1, 1942, the volume was more than 850,000 bbls. per day, a remarkable twenty fold increase demonstrating the intensive efforts of and the wholehearted cooperation between the Office of Defense Transportation, the railroads, the Reconstruction Finance Corporation, the oil industry, and the Petroleum Administration for War.

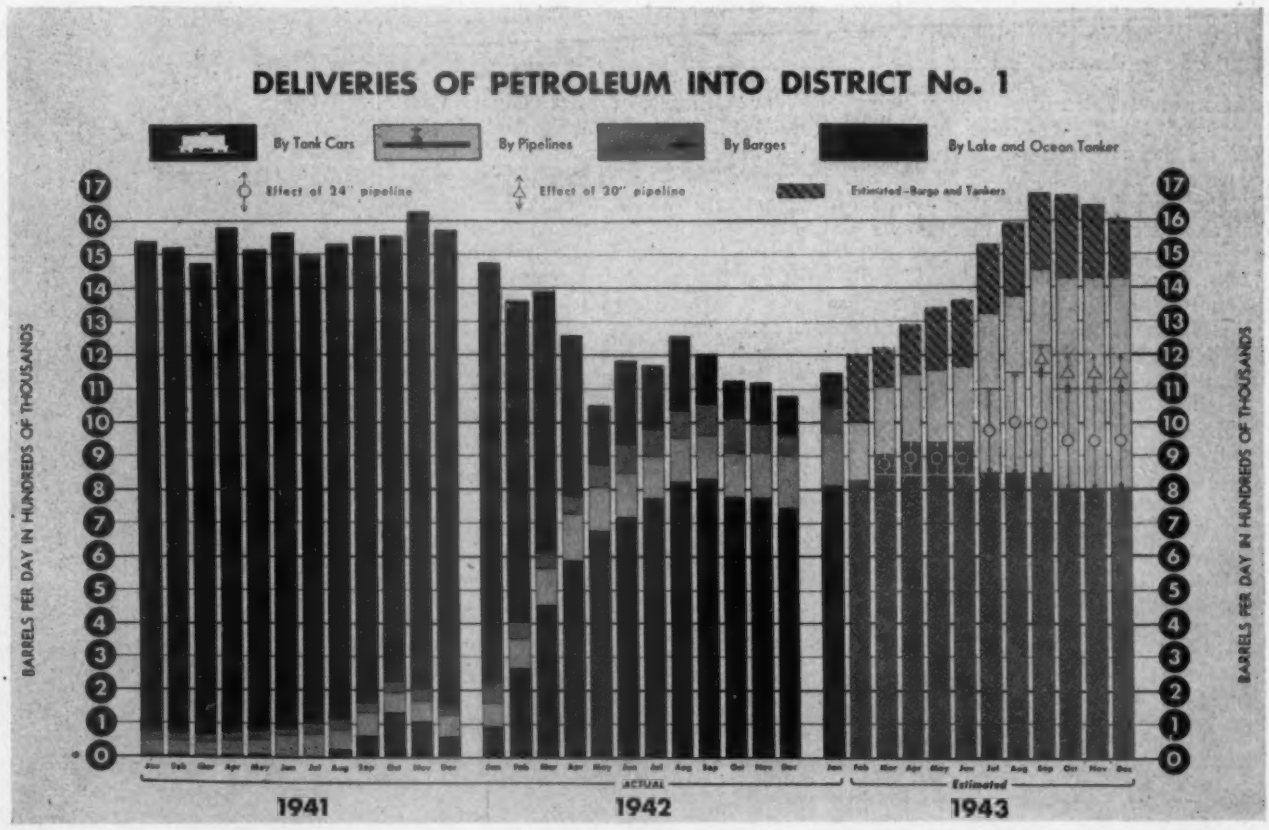
"The first section of our 24" or 'Big Inch' pipeline from Longview, Texas, to Norris City, Illinois, was a giant project completed in February of this year to deliver some 300,000 barrels per day into the southern Illinois area, and work is already under way on the extension of the line to the New York-Philadelphia area.

A second pipeline, 20" in diameter, has just been started to supplement the oil now carried by 24" line. If you look closely at the 1943 estimated segment of the chart you will see the symbol of the circle with the arrow through it, showing the effect of the 24" line and the triangle with the arrow through it showing the effect of the 20" pipeline.

"Barge transportation has also been sharply stepped up.

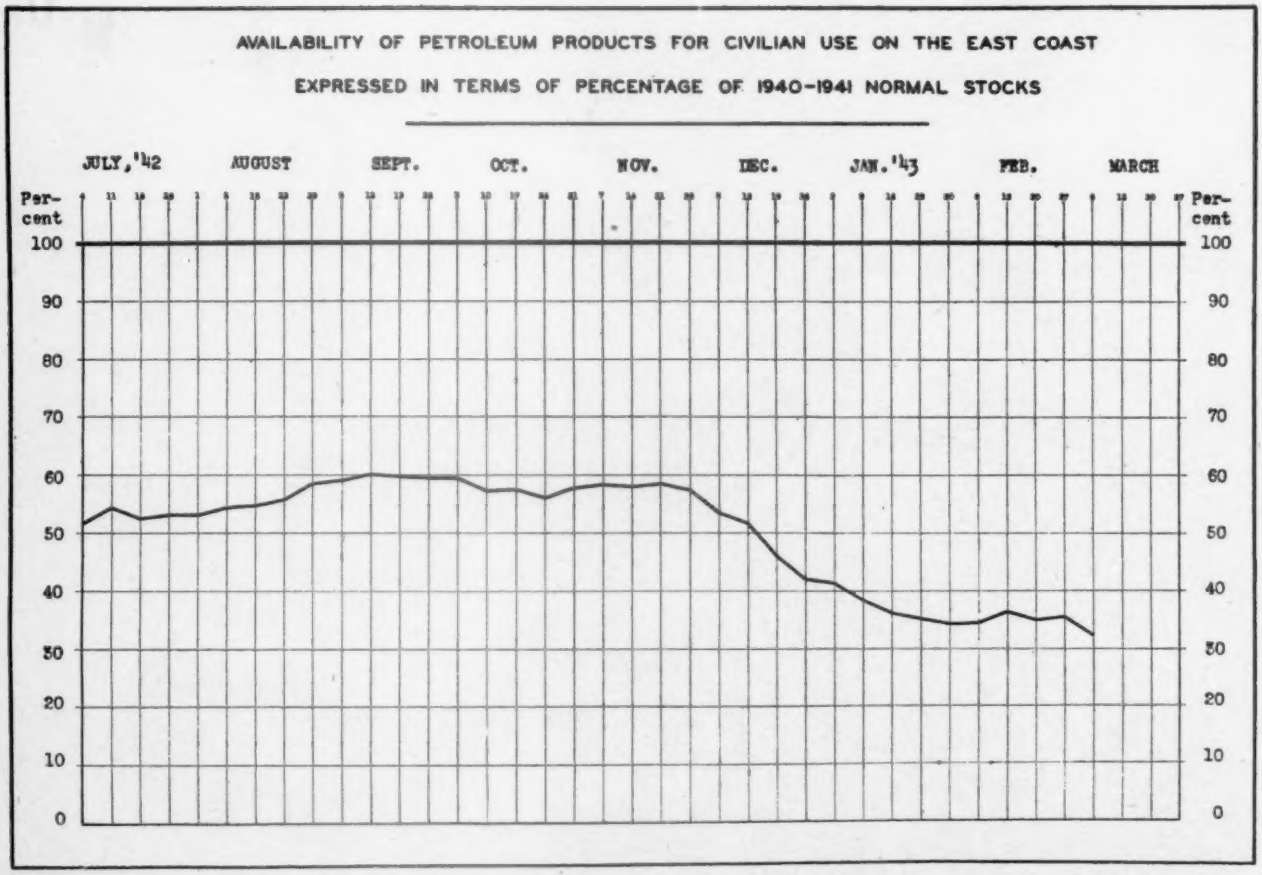
"Let me say, gentlemen, that this extraordinary wartime changeover has not just happened. Men of determination, foresight, and ability from industry and from government have aggressively pushed this program through in spite of manpower and material shortages to get the oil east.

"Your first reaction, I am sure, must be 'Now that's done, we've got plenty of oil.' But you know the answer as well as I do. You know that Boston is from 1,000 to 1,500 miles closer to Liverpool than the oil ports of the Gulf of Mexico; Gibraltar, 500 to 1,200 miles closer to New England ports; and Archangel, 1,500 to 2,500 miles closer than Gulf Coast ports. So when we speak of fuel on the East Coast we are talking not only of New England but of Dakar, Casablanca, Algiers, and every foot



NOTE: Deliveries to District No. 1 (the 17 Atlantic Seaboard States) in 1941 were, in general, representative of pre-emergency conditions. Deliveries in 1942 show the transition from use of tankers to substitute means of transportation. Estimated increased deliveries in 1943 reflect the effect of completion of the 24" line to Philadelphia and New York and the first section of the 20" line from the Gulf to Seymour, Indiana. These estimated increased deliveries will be required to meet a greatly expanded military demand for petroleum and to supply civilian markets on rationed bases.

Prepared by Committee on Transportation; W. Alton Jones, Chairman Petroleum Industry War Council, 1625 K St., N. W., Washington, D. C. March 15, 1943.



of Continental Europe over which troops of the United Nations will pass on their long, hard, but victorious road to Berlin.

"The second chart, prepared by the American Petroleum Institute, shows in percentage of 1940-41 normal stocks, the current availability of petroleum products for civilian use on the East Coast. Take a good look at that heavy black line across the top of the chart—that was your pre-war position when there was plenty of oil for all our industrial, commercial, and domestic needs. Now look at our position in early March — approximately 33 per cent of normal. The significant point is this—current demands can be met with current movement of oil products into the East, but we have no large cushion of stocks to be used in meeting unseasonably cold weather or other sudden change which steps up the demand.

"I think you can visualize from these two simple charts the tremendous impact of our military needs on our petroleum supplies, for with all of our fight to replace transportation lost through conversion of our tanker fleet to war needs, we have only one-third the normal peace-time stocks of petroleum products available for civilian use in the East."

Alexander Macomber, Director, Manufactured Gas Division, Office of War Utilities, War Production Board, talked informally of the highly important work on which he is engaged.

He pointed out that the Office of War Utilities is one of the 14 claimant agencies of the War Production Board, and that it is made up of the following five divisions: 1. Electric Power; 2. Communications; 3, Water Supply; 4. Natural Gas, and 5. Manufactured Gas. Much of the work of the Manufactured Gas Division has to do with the administration of Limitation Order No. 174.

Other papers included the following:

"Can Management and Labor Cooperate?" by E. C. Robbins, Professor of Industrial Management, Harvard Graduate School of Business Administration; "Gas Industry's War Activities" by Ernest R. Acker, Chairman, Committee on War Activities, American Gas Association, President and General Manager, Central Hudson Gas & Electric Corp.

"Home Service In War Time—A Bill Of Particulars",—Part of an Address by George S. Jones, Jr.

Vice President and General Sales Manager, Servel, Inc.

"Surely that gas company who during the war has increased in stature by developing news ways to serve its consumers will have every reason to look forward to public support."

"In like manner, public relations must be created in advance. When this war is over and consumer durables are again being made on the assembly line and customers are being sought, it will be too late to build public relations. The one instrument still in full flower at the disposal of the gas industry to maintain present community standing, to seek increased opportunities to render service, and to improve public relations against the day when gas and gas appliance sales will again measure the accomplishment of utility management is the Home Service girl."

Declaring that the contribution of the Home Service girl must offset the 40 million calls that gas appliance salesmen are no longer making, as

(Concluded on page 50)

GREATER CAPACITY,

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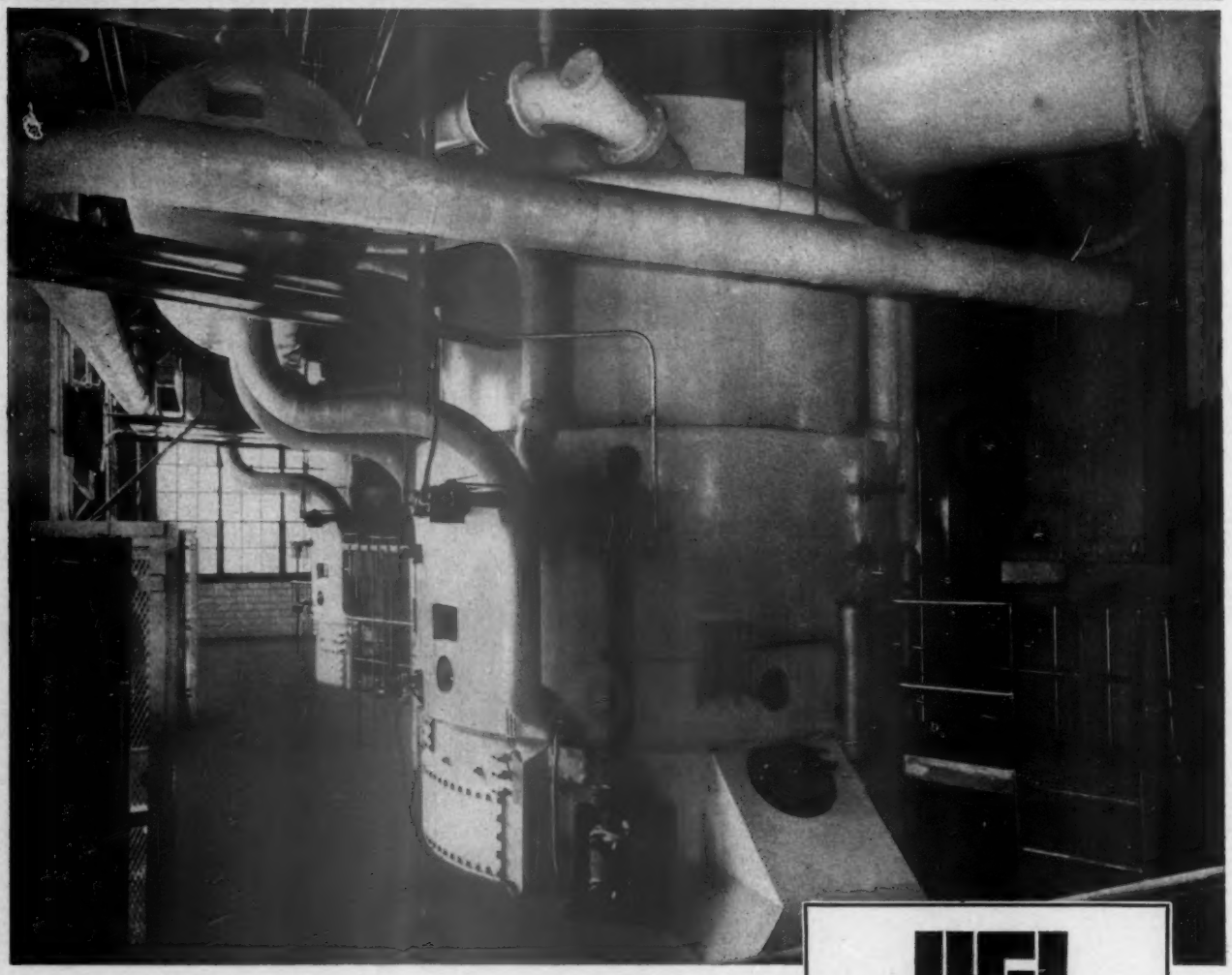

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Trends In Public Utility Regulation

By

C. O. Ruggles

Professor of Public Utility Management and Regulation,
Harvard Graduate School of Business Administration

THIS BRIEF DISCUSSION is limited to some trends in regulation: first, as affecting rate making; second, in determining a rate base; third, concerning public utility management; and so forth, as to the character of regulation itself.

Rate Making

The impact of two world wars on public utility rate making has been significant. Rate regulation of utilities other than carriers was comparatively new when World War I broke out. In the early history of our public utilities neither the men managing these industries nor those responsible for their regulation understood how to make utility rates. The rates of the early gas companies, for example, did not give adequate weight to the fact that there is a very close relationship between rate making and the fullest possible development of the various segments of the market for gas. Indeed the earliest gas rates were made on the assumption that the market for gas was homogeneous, hence the wide use of uniform rates regardless of the amount used or the economic factors involved in pricing gas for different types of customers. The early public conception of rate making was very much confused. There was a widespread faith that competition was the best possible method of regulating rates even among full-fledged public utilities. But the public was inconsistent, since, along with this early theory, rates were being rigidly fixed for very long periods of time in utility franchises. At the beginning of World War I, both of these unsound theories regarding rate making had been rather generally discredited although by no means discarded. By that time we were beginning to grant power over rate making to public utility commissions, because we had become convinced that highly dynamic economic factors should be given greater consideration in the making of rates. But at the beginning of World War I the two commissions that were leaders in a more vigorous regulation of utilities, New York and Wisconsin, were only about seven years old. Moreover, it must not be forgotten that one of the outstanding reasons for creating these public utility commissions was to bring about reductions in public utility rates. Consequently, when costs of utility service advanced sharply during World War I it was very difficult indeed for these new administrative bodies to make advances in rates. Automatic adjustments of rates through coal or fuel clauses did not come into use until near the close of the First World War. But it is a fair statement that our experience during that war did much to disturb the complacent theory that public utility rates could be expected to remain fixed and rigid while the prices of everything entering into utility service sharply advanced. The change in public opinion regarding rate making, growing out of the difficulties experienced by the public utilities in World War I, resulted in various types of regulatory measures, beginning approximately at the close of the war. Among other things, certain of these statutes sought, first, to secure greater flexibility in utility rates and, second, to shorten the time required in making changes in rates.

Increase in Fuel Costs

We are now seeing, in the government's efforts to prevent inflation, an attempt to prevent, among other things, the operation even of automatic fuel clauses which might result in a general advance in certain public utility rates. And yet the increases in the price of fuel would seem to be the logical starting point for government action. But in spite of the fact that the public utility industries may be called upon in this war to serve as shock absorbers for the government's failure to hold down prices of what enters into public utility service, when the lessons of the two world wars are fully understood it seems probable that there will be a growing appreciation of the fact that public utilities cannot be expected to perform economic miracles; that they cannot operate under fixed or reduced rates when everything they must use to provide service has advanced in price.

Determination of Rate Base

A part of the effort to cut down the delays in bringing about changes in public utility rates involves the second point in this discussion, the determination of a rate base. Neither the public nor the public utilities have been consistent with regard to the choice of a rate base. In the notable case of Smyth v. Ames, decided by the Supreme Court in 1898, William Jennings Bryan, as counsel for the interests of the public, contended for reproduction cost, while the railroads favored investment as indicated by their outstanding securities. Prices at the time this case arose in the State of Nebraska were low compared with the prices under which many of the railroads of the Middle West has been built. For this reason, Bryan contended for reproduction cost as a rate base because it would give a lower rate base. Likewise the railroads favored emphasis on investment calculated as has been indicated, because such procedure would result in a higher rate base. Curiously enough, the ink was scarcely dry on Bryan's brief before prices started a long climb upward; hence, not many years later railroad and other public utility attorneys were making use of Bryan's arguments and shifting their support to reproduction cost, while the public became the champion of some such theory as original, or historical cost or prudent investment. If we should go through a period of years in which there will be marked expansion of public utility plant at inflated prices, we will doubtless see the public and the public utilities again shifting their position regarding their choice of a rate base.

While in this brief discussion it is not possible to consider the merits of the different theories of determining a rate base, it is germane to the issues involved to point out that the vital importance of the time element involved in making changes in public utility rates is one of the strongest arguments against the use of reproduction cost as a rate base. Unless changes in rates can be made within a reasonable period of time, neither the public utilities nor the public is likely to secure the relief to which each may be entitled. To eliminate much of this delay, statutes, growing

partly out of the experience in the First World War, were passed which provided for temporary or negotiated rates, thus eliminating much of the time required to find reproduction cost as a rate base. For the same reason, there has been increased interest in the use of automatic or escalator clauses and the so-called sliding scale plan of securing automatic changes in rates without the expense and delay involved in long - drawn - out rate cases. While sliding scale methods of rate changes have their limitations and the sliding scale itself must be adjusted as economic conditions change, any device which will shorten the time involved in making changes in rates deserves serious consideration. An effective sliding scale, involving as it does not only rate changes but also the rate base itself, is dependent upon intelligent adjustments being made by competent public utilities commissions.

Some of the more recent decisions of the Supreme Court indicate that the public utility commissions are to be given more freedom and responsibility in rate making and in determining a rate base. In the Natural Gas Pipe Line Company case, decided in March 1942, the Supreme Court said:

The Constitution does not bind rate-making bodies to the service of any single formula or combination of formulas. Agencies to whom this legislative power has been delegated are free, within the ambit of their statutory authority, to make the pragmatic adjustments which may be called for by particular circumstances. Once a fair hearing has been given, proper findings made and other statutory requirements satisfied, the courts cannot intervene in the absence of a clear showing that the limits of due process have been overstepped. If the Commission's order, as applied to the facts before it and viewed in its entirety, produces no arbitrary result, our inquiry is at an end.

Position of Utility Commissions

It is a compliment to our courts that they are giving increased recognition to the fact that the public utility commissions are in a strategic position to become familiar with the economic factors involved in public utility regulation, and hence should be given somewhat more latitude in rate making and in determining a rate base. It is to be hoped that the commissions will justify the increased responsibility that has been placed upon them by this recent decision. These commissions will be unable to do this unless they receive public recognition. After all, the problems involved in rate making and in determining a rate base are economic problems, and the public should take the Supreme Courts' decision seriously and see to it that public utility commissions are adequately financed; that they are made as free as possible from political interference; that the salaries of commissioners and experts on their staffs be adequate and the tenure of office be such as to attract capable men. The Supreme Court has given the public a real incentive to improve the character of these commissions, and thus to focus increasing attention upon economic rather than mere legalistic issues in rate making and in the determination of a rate base.

Regulation concerned with public utility management was until the middle 1930's very slow in developing in the United States. Within the past decade much emphasis has been placed on this aspect of public utility regulation. The attempts on the part of the management of some of our

large public utility systems and the various interests affiliated with them to obtain large gains through public utility financing greatly stimulated the demand for this phase of regulation.

Position of Utility Management

The exact dividing line between what should be left to public utility management and what should be determined by regulatory bodies is very difficult to draw. It is, as some one has said, like attempting to draw the dividing line between day and night. All regulation interferes more or less with management, but in more recent years many decisions formerly left entirely to management have been made by regulatory agencies. Because of the possibilities of fortunate or unfortunate results from such regulation, we are again confronted with the need for thoroughly competent and well-equipped commissions if we are to have such a realistic approach to the regulation of public utility management as will not discourage efficiency in management. The public interest will not be served by a type of regulation which can be properly characterized as undue interference with public utility management. But there is a vast difference between regulation which constitutes unwarranted interference with management, and regulation which holds management responsible for reasonable results. Moreover, such regulation should apply to all public utilities, whether publicly or privately owned and operated. The discussion of this third point leads normally into the fourth, trends in the character of regulation itself.

Holding Company Act

While it is not possible within the limits of this discussion to consider the degree to which provisions of the Holding Company Act are sound or unsound, it may be pointed out that the government was justified in objecting to certain managerial control by top holding companies over some of the affairs of far flung operating companies. Under this high degree of centralized management of some of the holding company organizations, decisions were made on certain matters of public utility management that could have been more wisely determined by the executives of the operating companies. Now, however, the government is making the same mistake in the field of regulation that the utilities made in the field of management. While we must have federal control over matters which are beyond the power of the states, we need not develop a high degree of centralization in Federal regulation. Decentralization of Federal regulation through Federal Regional Commissions deserves to be given very serious consideration in a country the size of the United States.

Finally, different Federal agencies now have control over certain aspects of the utility business that should be controlled by a single Federal commission. Complete familiarity with one phase of a public utility's business is often invaluable in the regulation of another aspect of its business. This fundamental principle ought to be given recognition through some careful "integration" of Federal regulation itself.

Presented at the Annual Business Conference, New England Gas Assn., Boston, Mass., March 18, 1943.

Determining Speeds

By

W. F. Schaphorst, M.E.

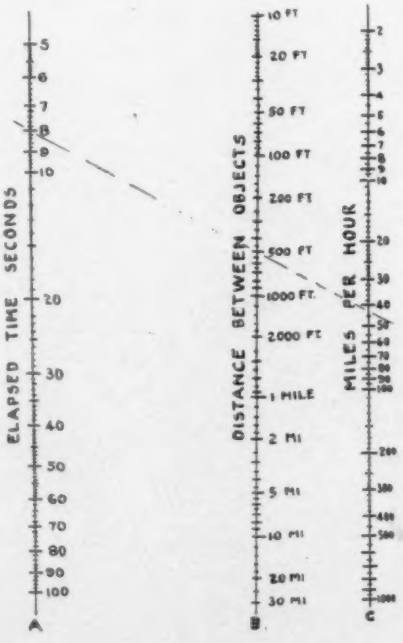
Newark, N. J.

The accompanying chart shows the endless number of applications for determining ordinary and extraordinary speeds in our plants.

The higher speeds that are commonly used are generally given in feet per minute or per second. Low speeds are given in miles per hour.

Charts giving the higher speeds are more or less common, but this writer has never seen a chart that gives miles per hour—and so he developed this one.

For example, let us say that in your plant you have a comveying belt and you find that a given article on it travels between two given points in 8 seconds. The two points are 500 feet apart. What is the speed of the belt?



The dotted line drawn across the chart shows that the speed is better than 40 miles per hour.

Simply lay a ruler or straightedge across the chart, through the elapsed time, column A, and through the distance between the marked points, column B, and the answer is instantly found in column C.

The columns are read in the same way that you read an ordinary thermometer. Thus, roughly, you would say that the dotted line cuts column C at 43, which means that the speed of the conveyer belt is 43 miles per hour.

As will be noted, the range of the chart is extremely wide—from 2 miles per hour to 1000 miles per hour. It is not likely that anybody in your plant, aside from the office boy, goes slower than 2 miles per hour. And if you ever find yourself or anything else going at a 1000 mile clip—you will be "pretty fast"—faster even than a modern dive bomber.

R. A. Gordon Appointed on Gas Copy Sub-Committee

H. Carl Wolf, Chairman of the Committee on National Advertising, announces the appointment of Roger A. Gordon, acting general sales manager, Washington Gas Light Company, Washington, D. C., to the Sub-Committee on Approval of Domestic Gas Copy.

This Committee executes copy, layout and other details in connection with the conduct of the gas industry's national advertising program, on instructions from Mr. Wolf's Committee.

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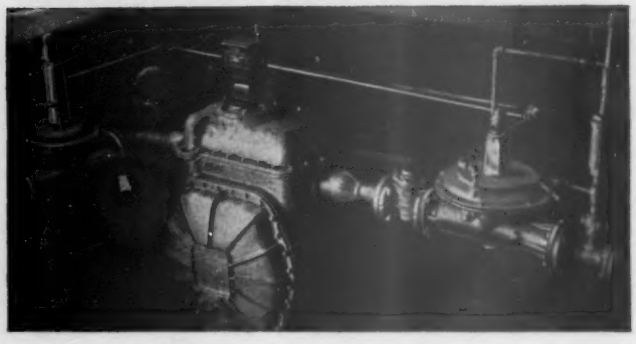

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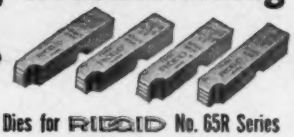

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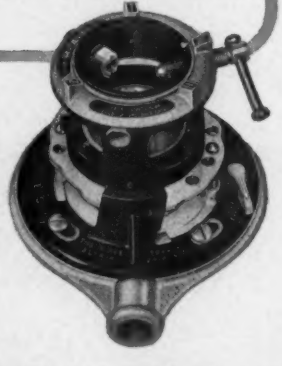

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The Industrial and Commercial Gas Meeting at Detroit

THE A. G. A. War Conference on Industrial and Commercial Gas, was held at Statler Hotel, Detroit, Mich., March 11 and 12th.

Ben H. Gardner, chairman, Industrial and Commercial Gas Section, and U. P. Columbia Engineering Corp., Columbus, O., presided at the Thursday morning session.

C. L. Brockschmidt, Office of War Utilities, W.P.B., Washington, D. C., spoke on the subject of Industrial and Commercial Gas Operations Under Limitation Orders L-31 and L-174.

He explained in detail why certain restrictions had to be adopted. After his talk Franklin T. Rainey, Ohio Fuel Gas Co., Columbus, presented a series of 25 questions. How the questions were compiled and the correct answer given will be found elsewhere in this issue of AMERICAN GAS JOURNAL. Mr. Brockschmidt also answered a number of questions from the delegates attending. It was evident that many parts of the orders were not clearly understood, but the question period cleared them up.

The speaker at the luncheon was John W. Batten, V. P. and General Manager, Michigan Consolidated Gas Co., Detroit. He recited examples of the great increase in the use of gas in industry during the past few years. As chairman of the Committee on Industrial Gas Research he outlined some of the activities of the committee, and stated that the A. G. A. research activities had been very helpful in its contributions on the subject of metallurgy.

The afternoon session was presided over by Charles G. Young, manager, Springfield Gas Light Co., Springfield, Mass. E. S. deCoriolis, Research Director, Surface Combustion Co., stated that the war period had brought to a culmination the definite acceptance by industry as a whole of gas as the preferred fuel for heating operations. However, still greater efforts will be required in the post-war period if gas is to retain its enviable position.

Roy E. Wright, New England Gas & Electric Assn., Cambridge, Mass., stressed the importance of the commercial gas load, and urged that every commercial gas user be contacted frequently, see that his equipment is properly adjusted and iron out any little misunderstandings, and keep their friendship.

Table Group at the Conference. Left to right: Charles G. Young, Manager, Springfield Gas Light Co., Springfield, Mass., and Vice Chairman, Industrial and Commercial Gas Section; Lieut. Comdr. S. P. Rodgers, U.S.N.R., Washington, D. C.; H. W. Milner, Office Chief of Ordnance, War Department, Washington, D. C.; B. H. Gardner, Vice Pres., Columbia Engineering Corp., Columbus, Ohio, and Chairman, Industrial and Commercial Gas Section; Brig. Gen. Walter B. Pyron, Chief, Fuels Branch, Headquarters, Services of Supply, Washington, D. C.; J. W. Batten, Vice Pres. & Gen. Mgr., Michigan Consolidated Gas Co., Detroit, Michigan, and Chairman, Committee on Industrial Gas Research; Lt. Col. R. B. Harris, Chief, Fuel & Power Unit, Detroit Ordnance District, Detroit, Michigan.

Henry O. Loebell, New York, discussed the industrial and commercial space heating load. He stated that it seemed desirable to examine the records of the past and re-evaluate this business from the standpoint of its potential market.

The Friday morning session was addressed by Brigadier General Walter B. Pyron, Chief, Fuels Branch Headquarters S. O. S., Washington, D. C. He explained that the fuel problem was nation wide in scope, and that it would be helpful, wherever possible, to convert oil to gas through the summer months and off peak load periods. It is necessary, he said, to conserve oil in every way possible.

"What the War Period is Doing to Metal Treating With Gas," was the title of a paper read by John P. Brosius, Chairman, Metal Treating and Melting Group, Equitable Gas Co., Pittsburgh, Pa. He analyzed the utilization of gas in war production and the changes taking place daily, and made suggestion to industrial gas men in the handling of daily problems that arise.

F. M. Marklin, Philadelphia Electric Co., Philadelphia, Pa., presented a paper reviewing the new developments in furnaceless heating methods and their importance during the war and after.

C. George Segeler, Engineer of Utilization, American Gas Association, New York, N. Y., presented a paper entitled "New Applications of Gas in the Aluminum and Magnesium Field." He stated that the revolutionary increase in aluminum production now taking place will have widespread immediate and future effects. The price and weight relationships of aluminum and copper will probably tend to reduce the use of copper alloys in the future. The theory of heat treating aluminum alloys, both wrought and cast forms, he described, pointing out the extraordinary possibilities of the stabilizing anneal for certain cast alloys in place of the standard solution heat treatment.

G. E. May, New Orleans Public Service, Inc., New Orleans, La., presented a report on air conditioning small commercial establishments with gas. It covered experiences in selling, installing and operating gas air conditioning apparatus.

C. V. Sorenson, Northern Indiana Public Service Co., Hammond, Ind., who is a member of the A. G. A. Post-War Planning Committee, presented a paper on the outlook for industrial and commercial gas based on wartime experiences. Mr. Sorenson's paper appears elsewhere in this issue of the Journal.

The attendance at the two-day meeting was approximately 250.

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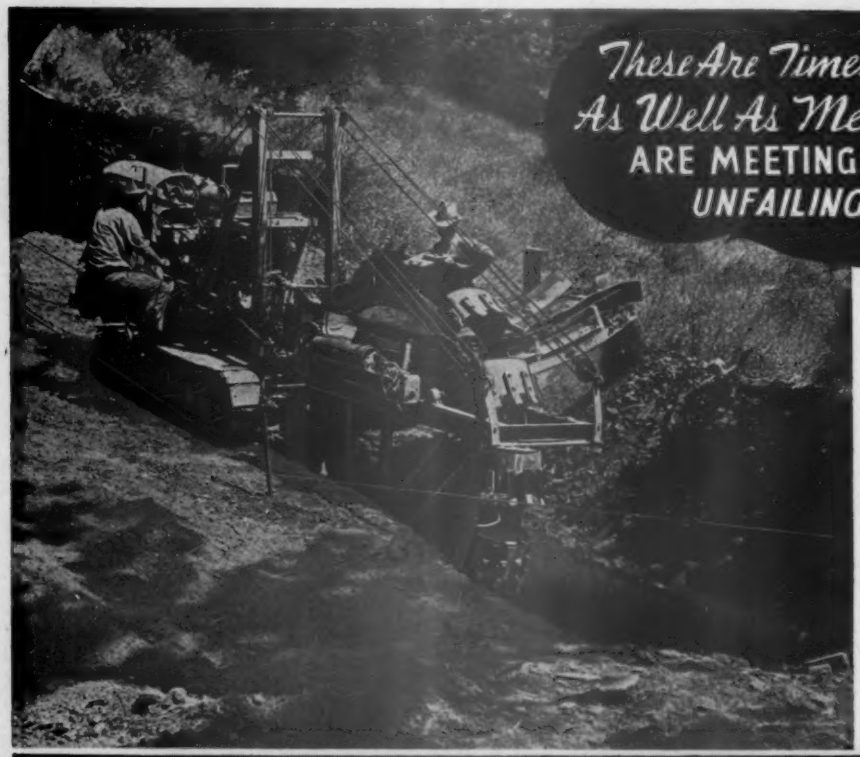

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"CLEVELANDS" Save More . . . Because they Do More

Improving the Outlook for Industrial and Commercial Gas in the Post-War Period

By

C. V. Sorenson*

Northern Indiana Public Service Company
Hammond, Indiana

THE TITLE of this paper implies a discussion of ways and means to increase the volume of Industrial and Commercial Gas sales and revenues when the war is over. Admitting for the moment the desirability of such a result, we face the question of how it can best be accomplished and in the possible answers lie several points I should like to submit for your consideration as follows:

1. Any attempt to find an answer will involve post-war plans or thinking in some degree. Numerous opinions expressed pro and con on post-war planning indicate the importance of the subject and the amount of thinking being done about it. Without attempting to discuss the broad questions of economics involved in the general subject of post-war planning on a national scale, we can agree that the gas industry will be expected to continue to serve the public when the war is over and we must be prepared to meet the demand.

If we are to be ready to supply gas as and when wanted by the public, and meet the demand for new extensions, pipe lines and added plant capacity, one most important problem is to keep the industry in a sound condition. The one sure way to approach that problem is first to know its kind and size. How much revenue will we lose with the cessation of the war? What change will take place in the percentage each class of revenue will bear to the total? How will this affect our average selling price of gas? Will material and labor costs remain permanently higher? What about taxes? And finally, what about the margin between revenue and operating costs? Will it be smaller as a result of the above and, if so, how much new revenue at what margin will be needed to restore the company to its pre-war stability, and where can the necessary new business be secured?

This may or may not be properly called Post-War Planning, but it is necessary long range thinking that prudent management must do. The answer to these questions will measure our post-war problem and indicate the kind and size of the plans that will be necessary to produce the desired results, although the details of sales approach may await the proper moment.

2. When management scans the various classes of revenue to determine where post-war increases can be secured, the commercial and industrial departments will be asked what, if anything, they can contribute. There is the school of thought which says that when business is poor, you can't sell more commercial gas to restaurants, because they won't prepare more meals than the public will buy, and that in times of depression, you can't put on a campaign to get the factories to start up just so they will use more industrial gas. Granting those points, there is a more definite way by which these departments can contribute their share. It is a broad approach to the problems of the industry from the angle that the general business life of an area is based upon the industrial activity of that area.

We know that every effort will be made by government and industry to maintain general business activity at a high level after the war. The potential problems of the service cost of the national debt and unemployment resulting from demobilization and release of war workers make such action almost mandatory. Meeting the deferred demands for capital and consumer goods, for new homes, and public works are some of the methods that will be used to hold business at high levels.

But good business nationally will not necessarily carry over into the territory of a given company or even a rather broad area, unless something is done about it and because the commercial and industrial gas men are so close to business and industry they should be of great help, not only to the gas industry and the individual gas company but to industry generally in the territory served by the gas company, in the following manner:

3. Let us look at the opportunity of the industrial department in an individual territory.

(1) It can determine the general type of industry which exists in the area and what type of business activity will benefit local industry to the greatest extent. i.e.,

Home building
Industrial construction
Civic rehabilitation
Consumer durable goods
Public works, etc.

(2) Determine how probable national business trends will affect the area in question. We know that consumer goods, such as automobiles and refrigerators, will directly affect Detroit and the steel producing areas. An extensive replacement of railroad cars and motive power would maintain employment in definite areas, and if the post-war home is put on a production line basis, certain other industries and areas will benefit.

(3) What is the industrial man learning from experience with gas in war industries and how can that information benefit local industry?

How has it performed in new applications—what about oven designs and controls? What place will there be for industrial gas in the production of plastics—magnesium and aluminum?

(4) Knowing what industrial gas can do and anticipating probable business trends, what will be the normal expectation for gas sales in the area?

(5) If the above does not reflect a satisfactory volume, is there anything the company should do to promote greater industrial diversity in its territory?

Analyze the natural advantages of the territory in question, such as:

Labor
Natural resources
Shipping facilities
Availability of markets
Housing
Schools

Based on these and the probable

** Member, A.G.A. Post-War Planning Committee*

general industrial trend, can be company help promote industrial activity that is not now common in its area?

This may lead the industrial man somewhat afield from his normal activities, but he is well equipped by training and experience to judge the industrial possibilities of his territory.

4. In an effort to sample the post-war industrial possibilities, one industrial gas engineer was interviewed and the results are most interesting. Without benefit of previous study, he discussed the following interesting facts about the post-war industrial gas market and its problems:

(1) The problem of riveted vs. welded freight cars and pointed out a loss of gas sales if welded construction prevails, but also pointed out that hot forming, if used, would materially increase the use of gas, and further that it should be possible to construct the entire car using the type of construction of the so-called "Murphy" end, thus cutting down weight, speeding output and, incidentally, using more gas in a semi-continuous or roll type furnace.

(2) Certain types of industry could get into passenger car work and aluminum and magnesium alloys used present problems in melting and heat treating.

(3) Plastics will no doubt be extensively used and the heating of platens is still a problem.

(4) The advent of lighter metals will greatly change the operations of certain pre-war industries.

One plant was cited as an example. Its pre-war product was widely used in refrigerators and kitchen equipment. The plant has not only converted to war production but is increasing its facilities to include aluminum and magnesium products on war contracts with a view to the post war possibilities of this type of business. The interest of the industrial gas man is shown in the following:

Pre-war normal gas take	8	**M.C.F.**	**per**	**hour**
Present take	11	"	"	"
Will increase present take to	31	"	"	"
Probably will add heat treating	10	"	"	"

I hear some gas men saying they don't want more load now, but our interest is the post-war period and a change in manufacturing conditions in this case indicates an increase of 5 times in the use of industrial gas by this customer.

(5) In another case, a rotary hearth forging furnace, now being used to produce shell casings (which, by the way, is new load) can be converted to produce airplane engine barrels after the war.

(6) The many changes taking place call for new and improved methods of use such as:

The need for more knowledge about heat treating new alloys.

Steel casting to replace forging and cut down the amount of scrap.

The need of better heat treating to improve the quality of castings.

Infra-red applications which produce a better product than competition.

Spot heating which seems to have some distinct advantages.

The above are the rather quick thoughts of a single engineer and indicate the wealth of ideas available if the entire section were carefully canvassed.

It is quite evident that there is a great deal to be done by the industrial man as an individual in his own company and as a group in this section.

5. The commercial field also presents opportunity for much constructive work some of which can be outlined as follows:

(1) Visit all commercial customers explaining how to make present equipment last and give the best results, and at the same time make a complete market analysis of the commercial field.

(2) During the visit find out what the user demands of his equipment, i.e.,

A. Style or design
Where will it be placed?
Will the customer see it?
Will style help sell its product?

B. Limitations placed by economics and competition on first cost and necessary terms of purchase.

C. Allowable cost of operation
(Including depreciation)
In terms of cost per unit produced.

D. The work or product it must turn out.
Will it help sell its product easier than competition can?
How must it perform against competition.

E. Accessibility for service and maintenance.

(3) The above data on customer preference and demands could be collected from the member companies by a committee of this section and resolved into a composite for each type of equipment and the number of models or sizes necessary could be determined.

This information passed on to manufacturers would be invaluable in the production of post-war commercial equipment.

A. It will allow the manufacturer to more accurately gage size and kind of the post-war market.

B. It should give the customer a piece of equipment that will more nearly suit his needs thus increasing his satisfaction with gas as a fuel.

C. It should greatly enlarge the market of the gas company and reduce the cost of sales coverage.

(4) During the visit learn from the customer the requirements placed on fuel used for each job or application where fuel is required and determine if the business is desirable, and if so —

Review—the necessary rate schedule
the kind and type of equipment available in normal times
necessary man power for territory coverage
required sales and advertising approach

(5) Determine the effect of expansion or contraction of post-war general business on the commercial gas revenues, as an aid to management in making its forecasts.

(6) Determine the customer's equipment that will need immediate replacement after the war.

This information should be made available at least in total to manufacturers.

(7) From the above arrive at:

A. Replacement market for worn out and obsolete equipment.

B. Market for replacement of competitive equipment.

C. New equipment market in new establishments if general business continues at present levels or expands.

D. New uses such as air-conditioning, commercial refrigeration, space heating, etc.

6. No effort is made in this discussion to suggest means for securing business that will become evident as a result of such a survey. Such plans are the type that can wait until the end of the war, and perhaps are the type most often referred to when post-war planning is frowned upon.

It is hoped that this paper has succeeded in pointing out the difference between the necessity of measuring the post-war problem and that of setting up the mechanics of selling a product.

When approached in this manner, we find a most important assignment for the members of this section. It seems that rather than telling you in glowing terms of the sales opportunities when the war is over, the industry is asking your help in analyzing and placing a set of conditions different by far than we have ever faced before.

Yes, our first task is to win the war—to turn out the most and best equipment in order to end the war quickly and save as many lives as possible; so we may be free to choose our own way of life; and argue over politics and predict that things are going to change; to use our improved skills to provide better goods for ourselves in the post-war period and to provide labor and a living for all; and finally when the day of victory comes, the American public will expect the gas industry to continue expanding and improving its service as it always has done in the past.

Presented at the A. G. A. Conference on Industrial and Commercial Gas, Detroit, March 11th and 12th, 1943.

British Register of the Gas Industry

The 1943 edition of this annual volume has recently been distributed. The directory section includes a list of Gas Associations, names of gas company officials arranged alphabetically, and a list of holding and of operating companies with a brief statement of equipment and output.

The technical section covers carbonization, chemical and by-product plant, coal and coke handling, cooking, distribution, gas holders, gas works tests, industrial and commercial heating, meters, paints and oils, plant equipment, purification, refractories, space heating and water heating.

Generous support of this 288 page volume is given by some 150 advertisers of equipment, appliances and services. Size 8½" x 11¾" with stiff cloth cover. Published by Hallows & Slaughter, Ltd., 29 Grove Road, Leighton Buzzard, Beds., England. A pocket directory, 3¼" x 5¼", of gas undertakings, officials, trade names and products is also issued by the publisher.

Mrs. Chlora Frances Rose, 29-year-old mother of four children, who is helping shorten the duration by working in the Estate finishing department, which, like all Estate departments, is now 100 percent on war work. Her husband also has a war work job.

"I'm helping paint a brighter future for America

(AND FOR MY FOUR YOUNGSTERS)"

"I guess I figure the way most of the mothers do who are working here at Estate.

"We want our children to be able to grow up in a *free* America . . . the kind of America we can have only if we *win* this war.

"Maybe that's why we put something *extra* into our jobs . . . same as the fellows and girls beside us who have husbands and brothers fighting in Africa and the South Pacific.

"You get a feeling, here at Estate, too, that there's only one way to *do* a job . . . the right way . . . in fact, a little *better than right.* It's always been like that at Estate, I hear . . . and I guess it always will be."

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The Estate Stove Company, Hamilton, Ohio

RECENT COURT DECISIONS
Affecting Gas Utilities

Legal Obligations of Foreign Gas Corporations

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

WHEN a gas corporation transacts business exclusively in the state in which it is incorporated controversy seldom arises over the authority of this state to control and regulate the business of the corporation. However, gas corporations organized and incorporated in one state, and doing business in another state very frequently are subjected to undesirable laws and regulations.

The state courts usually are reluctant to adopt a construction or interpretation of state laws which will enable foreign corporators to receive more favorable treatment than similar domestic corporations. On the other hand, according to a late higher court decision a foreign corporation may be, under certain circumstances, actually a domestic corporation. The legal effect of the decision is that a foreign corporation transacting almost all of its business in a state different from where it was incorporated must comply with laws of the latter state to exactly the same degree as if it were a domestic corporation.

For example, let us consider details of State v. Iowa Southern Utilities Company of Delaware, 2 N.W. (2d) 372. In this case it was shown that a utilities corporation was organized in Delaware but transacted its business in Iowa. Suit was filed against the corporation on the grounds that the corporation had issued stock in violation to the provisions of an Iowa state law.

It was contended that, because of these violations of the Iowa state statute, the stock so issued was void.

The counsel for the corporation argued that it was not required to comply with Iowa laws because it was organized under the laws of Delaware. However, the higher court held the corporation bound to comply with the Iowa laws, and in holding the issued stock void, said:

"They had no apparent intention of operating their utility plant, or of doing any other business in Delaware. Its officers, its plant and operating property, its assets, except a bank account or two, its business, almost all of its officers, its books and records, in fact, all of its physical manifestations, have always been, and are now in Iowa, within the jurisdiction of the courts of Iowa . . . While it was, and is, in law a legal resident of Delaware, and has its technical domicile there, its 'commercial' or 'economic' domicile is in Iowa. It was conceived in Iowa, born in Delaware, and has lived its entire life in Iowa. Its existence in Delaware is an illusory mirage, more atmospheric, than real. Under the circumstances it is, in actuality, more domestic than foreign. Stock issued without authority and in violation of law is void and confers no rights on the person to whom it is issued . . ."

Duty To Obtain Permit

Another important question often presented the higher court is: When and under what circumstances is a foreign gas corporation obligated to obtain a permit to transact business in another state?

Although many arguments have been presented to the contrary, modern higher courts hold that where a foreign corporation is *not* engaged in interstate commerce, or in any work or service of the Federal Government, it has no right to transact *any* business in another state except by complying with the statutory requirements enacted by the Legislature.

Speaking generally, a state may exclude a foreign corporation from transacting business within its borders, or condition its admittance, as it sees fit providing it does not thereby violate its own Constitution or the Constitution of the United States. This rule of law is applicable although a gas corporation, whose principal place of business is in one state, may have been organized under the laws of another state, and although the organic powers of the corporation depends upon the law of the state in which it was incorporated.

In other words, the decision of the officials of a gas corporation to do business within a foreign state is not by a right, but by comity only. It is, therefore, subject to and bound by the local laws of the state in which it intends to transact business. It is legally unable to exercise powers or perform acts, whether authorized by its charter or not, which are contrary to the laws of a state in which it performs intrastate transactions.

In view of this established law gas corporation officials should tacitly submit to the valid laws of such state and to the jurisdiction and process of its courts to the extent required by the state statutes.

For illustration, in American Company v. Diehl, 216 N. Y. 57, the higher court said:

"As long as a foreign corporation keeps away from this state it is not for us to say what it may do or not do. But when it comes into this state and transacts its business here, it must yield obedience to our laws . . . For many purposes the fiction of its residence in the state of its origin must then be disregarded."

When Franchise Tax Is Valid

It is well established law that a state may not use its taxing power to regulate or burden interstate commerce. However, a state excise tax which affects such commerce not directly but only incidentally and remotely may be valid where it is clear that it was not imposed with the covert purpose or with the effect of defeating federal constitutional rights.

For illustration, in America v. Evatt, 45 N.E. (2d) 118, the higher court held that a state may impose

a valid franchise tax on a corporation for the privilege of doing local business, if apportioned to the business done or property owned within the state.

Also, see Mississippi River Fuel Corporation v. Smith, 164 S.W. (2d) 370. Here a gas company was authorized to do business in Missouri. It operates a 22 inch pipe line from Louisiana, through Arkansas and into Missouri.

It is interesting to observe that the higher court held that the gas used in Missouri is subject to sales tax in Missouri. The court explained that this is the law under the old "broken package rule", which subjects articles imported in interstate commerce in original package to state taxation *when* the importer sells or breaks the package. Moreover, if the pressure is reduced before the gas reaches a branch line, and the gas in such branch lines is not returnable to the main line, the tax must be paid for all gas which enters the branch line although it is not used by the consumer.

Carboseal Anti-Leak

Gas company superintendent reports, "evermounting beneficial results."

A GAS company changed over from the distribution of wet manufactured gas to dry gas and later discovered considerable leakage in the bell-and-spigot joints of its gas mains. To stop the leaks, the joints in part of the system were recaulked . . . without success. The company later excavated through pavement on this part of the system . . . an expensive job . . . and clamped the joints.

On another part of the system the company superintendent then experimented with CARBOSEAL Anti-Leak, a liquid that swells the joint packing approximately 44 per cent in volume. Leakage was stopped. Three years later a recheck was made on the treated mains to determine the permanence of the Anti-Leak treatment. *On 4,000 feet of treated main, 65 previously reported leaky joints were tight and no other leaks were in evidence.*

The company now makes it a practice in all its dry-gas systems to treat bell-and-spigot mains with CARBOSEAL Anti-Leak before street paving. To date, 20,000 feet of 4-inch main, 10,000 feet of 6-inch main, and 5,000 feet of 8-, 10-, and 12-inch main have been treated. The company superintendent reports: "We are satisfied that this method of main treatment is effective and the program can be continued with evermounting beneficial results."*

If you have a leakage problem in bell-and-spigot joints, in a dry-gas system, use CARBOSEAL Anti-Leak. It may solve your problem as successfully as the problem was solved for this company. For further information write for the book, "Correcting Leakage in Gas Distribution Systems with CARBOSEAL Anti-Leak."

*Reprints of the superintendent's article are available.

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Right To License Corporation

Considerable discussion has arisen from time to time over the legal question: When and under what circumstances may a state compel a foreign corporation to obtain a license? Recently a higher court answered this question, as follows:

"Where a state prescribes conditions upon which a foreign corporation may do business within it, such corporation thereafter doing business in the state will be presumed to have assented to the conditions prescribed, and will be bound accordingly . . . Compliance with statutory prerequisites has the effect, generally speaking, of bringing the complaint foreign corporation into the state on substantially the same footing as domestic corporations, except as otherwise specified by the statutes."

Visitorial Powers

In many instances the counsels for foreign gas corporations have argued that such corporations should avoid the force and effect of state statutes, because they do not permit the exercise of visitorial powers upon a foreign corporation doing business in a state.

Modern higher courts have held very consistently that the term "visitorial," sometimes given the more awesome appearance of "visitatorial," was originally used almost entirely with respect to domestic corporations. It is now usually applied to foreign corporations doing business out of their domiciliary State.

Visitation is defined as the act of examining into the affairs of a corporation. The purpose of visitation is to supervise and control the management of the corporation, and to keep them within the legitimate sphere of their operations and to correct all abuses of authority and to nullify all irregular proceedings.

Moreover, according to late higher courts a state, by its authorized officers, has the undoubted right to require full information as to *all* of the business of a gas corporation created by it or which it has permitted to come into the state.

For illustration, in Fletcher, Vol. 17 Cye. Corporation Sect. 8427, p. 381, the court said:

"While a foreign corporation is not subject to the general visitorial powers which a state possesses over domestic corporations, the franchises of a corporation doing business within the state must be exercised in accordance with the law thereof, and consequently the state has the same visitorial powers over such a corporation, necessary to enable it to ascertain whether its laws have been obeyed, as it has, for such purposes, over a corporation of its own creation."

And in 23 Am. Jur. Sect. 493, p. 433, the author states:

"A state has viritorial power over foreign corporations insofar as they are doing business within the state, and in connection with the acts constituting such business; and such regulation by a state is not deemed to interfere with the internal affairs or management of such corporations."

Accordingly, where a gas corporation is foreign in name only and the relief sought is within the general jurisdiction of the court of the foreign state in which it transacts business, modern courts hold that policy and expediency dictate the exercise of jurisdiction and the settlement of the controversy, even though it involves the internal affairs or management of the corporations.

Jurisdiction of Suits

In many important law suits the important consideration is: Is it proper for a court in the state in which the corporation transacts business to render the decision, or should the suit be decided by a court in the state in which the corporation was organized?

The internal affairs of the corporation often are involved in suits of this nature and for which reason the state in which the corporation was organized has authority to control and regulate the internal affairs of the corporation. We shall briefly review leading higher court cases in which it was decided that courts in the state in which the foreign corporation transacted business has jurisdiction to decide a particular kind of suit, irrespective of decisions rendered by courts in the state in which it was incorporated.

In Sharp v. Jim, 39 Cal. App. (2d) 435, a suit was filed to enjoin the levy of an assessment on the corporate stock of an Arizona corporation with all parties, property, business offices and records in California. It was held that the California court had jurisdiction.

In Consumers', 280 Pa. 263, a Delaware corporation had all of its business offices in Pennsylvania. A suit for a receiver, because of corporate mismanagement, was held proper in Pennsylvania.

In Corry v. Barre Company, 9 Vt. 413, a stockholder attacked the wrongful conduct of officers in an attempted disposal of the corporate assets. The corporation was chartered in Maine expressly for the purpose of doing business in Vermont, where its property was situated. The court held it entitled to the relief in Vermont "even if it involves an interference with the internal affairs of the corporation."

In Meyer, 110 N. J. Eq. 141, a Delaware corporation transacted its business in New Jersey. Accounting and restitution was properly ordered by the New Jersey court of property misappropriated.

In Williamson v. Missouri-Kansas Pipe Line Company, 8 Cir. 56 F. (2d) 503, a suit was filed against two Delaware corporations, doing no business in Delaware and having no office there except as was necessary to maintain corporate existence. All other physical manifestations are in Illinois. Relief was granted by the Illinois Court against manipulation of shares of stock, disposal of assets, wrongful interference with corporate functions. This court said:

"In such instances courts are not warranted in declining to exercise jurisdiction merely because the act complained of involves internal affairs and management of the corporation."

In Harr v. Pioneer, 2 Cir. 65 F. (2d) 332, a Delaware corporation had all of its assets in New York and its internal affairs were involved. It is important to know that in this case jurisdiction assumed by the New York court was denied because of prior Delaware decisions.

In Stabler v. El Dora Oil Company, 150 P. 643, a mandamus against an Arizona corporation and directors to call a stockholders' meeting was issued and sustained by a California court. The subject matters and parties all were in California.

In General Sherman v. Burris, 172 Wash. 142 a Nevada corporation had offices and officers in Washington and property in California. Relief granted by a Washington court to recover misappropriated property from the president was held valid.

In Voorhees v. Mason, 245 Ill. 256, the suit was against directors of a Delaware corporation for accounting and restitution for issuing ctock to themselves at fifty cents on the dollar. The court in Illinois, where the corporation transacted its business, was held authorized to decide the suit.

Also, see the leading cases, as follows:

Knox Terpezone Company, 215 N. Y. 259 (New Jersey corporation with offices and officers in New York. Transfer of stock on the books order.); Evans v. R. W. Evans & Company, 284 Pa. 126 (Delaware corporation in New Jersey. Transfer of stock ordered.); Cochran v. Shetler, 286 Pa. 226 (Receiver appointed for Delaware corporation in Pennsylvania); Conerty v. Butler County Oil Company, 301 Pa. 417 (Mandamus for inspection of corporate books of Arizona corporation in Pennsylvania granted and affirmed); Balch, 7 F. Supp. 420 (Delaware corporation with business, office, records in Oklahoma. Individual defendants were guiding geniuses in management of corporation. The board issued large amount of stock for alleged services); Hill v. Dealers' Corporation, 102 N. J. Eq. 310 (Business, assets, officers of Delaware corporation in forum. Custodial receiver appointed); Saltz v. Saltz Bros., Inc., 65 App. D. C. 393 (Connecticut corporation with all its business in Washington, D. C. Petition for receiver denied by Superior Ct. of District was reversed. The corporation was incorporated for reasons of convenience in Connecticut); Potter v. Victor Page, 300 F. 885 (Foreign corporation. All matters and activities in forum. Solvent, but losses threatened. Receiver appointed to conserve assets, liquidate property and distribute its local property.); Wait v. Kern Company, 157 Cal. 16 (Arizona corporation with office, business and property in California. The higher court in California held that laws for all practical purposes, it is a California corporation.).

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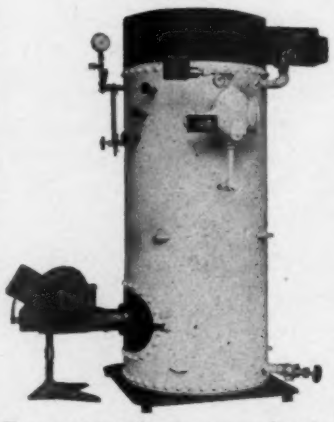

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Dust Scrubbing and Liquid Separator Installation

By
Fred A. Herr

THE TECHNICAL supervisor's staff of the Southern California Gas Co. has effectively demonstrated the truth of the well known saying, "Necessity is the mother of invention."

Impelled by the difficulty of obtaining heavy steel plate, the company drew upon the ingenuity of its technical staff and has recently completed construction of a combined horizontal dust scrubbing and liquid separating unit from materials gathered in their entirety from the firm's scrap pile and storeroom bins and without entering the market. The novel design of the installation has attracted the attention of gas uility officials throughout the western states.

The unit was erected at the Southern California Gas Co.'s Compressor Station No. 68, known as the Brea Station, which is located in the Puente Hills oil field area in Orange County, about 40 miles southeast of Los Angeles. The pressure at the intake header varies from 150 to 225 pounds per square inch and the discharge pressure is 300 pounds per square inch. The gas is transmitted from this compressor plant for distribution in the company's eastern area.

In the spring of 1942 a considerable quantity of dust appeared in the intake lines, this was carried into the compressors, where its abrasive action resulted in increased wear and tear and considerable trouble for the operating crews.

The company made various attempts to alleviate this situation by blowing and scouring the lines with steel shavings; but only temporary relief was obtained from those measures.

It was then decided to install a standard design vertical dust scrubber, which uses oil for trapping and removing dust from the gas stream. With an eye on the future, so that anticipated load increases could be handled, it was decided to design the scrubber for a capacity of 1½ million cubic feet per hour at a pressure of 400 pounds per square inch.

The difficulty involved in building a self-contained vertical scrubbing unit soon became apparent. It was discovered that a self-contained vertical dust scrubber would necessarily have to have a diameter of 4 ft. 6 in., would require ⅞ in. thick shell plate and would have a total weight of about 5200 lbs. Including heads, reinforcing plates, light internal plates and miscellaneous fittings, a unit of the size and type contemplated would have reached a total weight of 10,100 lbs.

To obtain the amount of steel required to build a unit of that kind was practically impossible. The steel market in Los Angeles in the summer and fall of 1942, while construction of the unit was being considered, was such that new heavy steel plates could not be obtained without the highest priority ratings; neither were fabrications shops available as a possible source of supply, since all such establishments were congested with defense work.

New Steel Unavailable

Conversion of an old vertical liquid separator into a dust washer, to be used in conjunction with one of the company's standard type horizontal liquid separators was considered; but the idea was rejected when it was found that about 3000 pounds of new ¾ inch steel plate would be required for the conversion job. The management of the company was anxious to cooperate in every way possible with the war effort and was reluctant to enter the market for strategic materials except in case of dire necessity.

In anticipation of a materials shortage contingency, the technical supervisory staff of the company, under the direction of J. B. Reddick, had studied the possibility of designing a horizontal type of oil contact dust scrubber which would incorporate the general principles of the standard vertical type. A design of that character, it was believed, would eliminate the need for heavy steel plate, since the shells and the heads could be made from short lengths of pipe. Further consideration disclosed that practically all the material needed for such a set up could be assembled from stocks which the gas company had on hand.

The second phase of planning an oil contact dust scrubber—removing the free oil entrained in the gas in a liquid separator—entailed no major difficulties, since the firm already had a standard horizontal liquid separator design which had given satisfactory performance under a variety of conditions for a number of years.

The novelty of the project developed when the technical supervisory staff decided to build a composite unit which involved essentially taking a liquid separator and superimposing and supporting it directly above a horizontal dust extraction unit, with the latter em-

Broadside view of combination horizontal dust scrubber and liquid separator designed by Southern California Gas Co. technicians and built without going into the open market for any strategic materials. All parts and incidentals came from the firm's junk pile and storerooms.

The liquid separator is shown on the left, and the dust scrubber on the right, with surge and filler tanks between them, behind the post.

This novel installation has successfully solved a dust problem in the intake lines at the company's Brea Station in the Puente Hills oil field, near Los Angeles.

Left: Shows a close-up of the uniquely designed horizontal dust scrubbing unit evolved by Southern California personnel when they found that a conventional vertical design was out of the question because of the difficulty of obtaining heavy steel plate. Right: Close-up of liquid separator.

bracing the same general principles as those of a vertical unit.

A preliminary design of the new horizontal scrubber and separator combination indicated that it would be fairly compact. While the company realized it was dealing with a purely pioneer design, time was too short to build an experimental unit. Southern California Gas Co. technicians, however, were confident that the design would at least mitigate the dust trouble.

It was therefore decided to build each unit separately and install them in tandem (see Fig. 1). In the event the performance did not measure up to expectations, the liquid separator unit could be disconnected and used elsewhere without major modifications; and the dust scrubbing unit could thereafter easily be remodeled into a liquid separator at small expense.

Operating Cost Cut

The installation of the completed device was made on December 1, 1942. Observations of the operation of the scrubbing unit taken between December 1, 1942, and January 15, 1943, disclosed that its performance during the first six weeks was entirely successful. During that period the unit used less than 0.20 gallons of scrubbing oil per million cubic feet of gas passed, and it has definitely eliminated the dust troubles. The operating efficiency is regarded by company officials as highly satisfactory. Vertical type units had been consuming from one-half to three-fifths gallons of oil per million cubic feet of gas.

The saving achieved in the weight of metal for construction is regarded by the Southern California Gas Co. as one of the noteworthy aspects of the project. The two horizontal units, as now in operation, have a combined weight of 8650 pounds against 10,100 for the originally considered design. This represents a saving of 1450 pounds of strategic material.

Dust Scrubber Detail

The two units, including all appurtenant surge tanks and other auxiliary devices, were constructed entirely of materials which the company was able to gather in its own junk piles and warehouse.

The dust scrubber unit is 19 ft. 2 in. long and is constructed of 26 in. O.D. pipe with 5/16 in. wall. The pipe through which the gas is admitted to the scrubber is of 10¾ O.D. It extends almost the length of the unit and is sealed off at a steel baffle plate. The bottom of this latter pipe is perforated with 15 orifices graduated in diameter and increasing from the inlet end toward the baffle-plate end in an endeavor to equalize the flow, as far as possible, through each orifice.

The gas discharges downward into a steel box 10½ inches wide by 15 ft. 8 in. long, the longitudinal sides of which are perforated with five rows of three-quarter inch holes. The oil in the unit, when in a static condition, barely covers the top of the upper row of holes. When the gas begins to flow, the oil level depresses and uncovers a sufficient number of holes to pass whatever volume is flowing. Oil is forced to the outside of the steel box in attempting to reach a higher level, due to the differential across the three-quarter inch orifices; and passing gas beats it into a froth and performs a secondary stage of washing through the impact of the gas on the liquid surface inside the box. The gas then rises through four 6-inch nozzles into a 12¾ inch O.D. pipe header, from which it is led into the liquid separator.

Surge Chamber

In order to minimize free oil entrainment by the gas stream and piling up of froth when the oil level depresses under flowing conditions, a portion of the oil passes outside the main unit into a surge chamber through which runs the oil return line from the liquid separator. The surge chamber is installed midway between the scrubber and the separator.

A filler tank is also installed at that point, this being connected by piping to the bottom of the main unit and the main gas line at the scrubber inlet. The filler tank is equipped with a valve and pipe vent to atmosphere. The other piping is valved so that pressure may be placed on the tank from the inlet gas line. Any desired quantity of make-up oil can be placed in the tank, its flow into the scrubber being actuated by the differential between the inlet line and the inside of the scrubber. Make up oil can therefore, be injected without interfering with operations. A feed oil storage tank is connected to the storage tank.

On the bottom of the scrubber are two 8 inch hand holes for cleaning out and two two inch oil draining lines connected to a single line leading to a sludge tank. The suspended dirt is allowed to settle out of the oil drainings in the sludge tank; and the clear oil is later pumped to the storage tank for re-use.

The Southern California Gas Co. uses absorption oil of a gravity rang-

(Continued on page 50)

Amended Limitation Order L-31

By
Franklin T. Rainey
The Ohio Fuel Gas Company
Columbus, Ohio

In order to visualize just what the restrictions under Orders L-31 and L-174, are, Franklin T. Rainey, Ohio Fuel Gas Co., Columbus, Ohio, wrote a number of gas men asking that they question any parts of the orders not clear to them. From the replies Mr. Rainey formulated 25 questions. These were submitted to Mr. C. L. Brockschmidt, Office of War Utilities, W.P.B., Washington, D. C., who gave the answers. Following are the questions and answers.

(1) Q. Are Government agencies exempt from Limitation Orders L-31 and L-174?

A. No.

(2) Q. A customer has been in the habit of spending his winters in Florida and his gas account shows no usage during the winter-time for his gas heating plant. Will he now be permitted to accept deliveries of gas for the operation of his heating equipment during winter periods when he is unable to go to Florida?

A. Yes.

(3) Q. A customer considered his space heating equipment obsolete. The gas company did not agree but, neverthless, the customer purchased new equipment. Is he entitled to gas service?

A. Yes, provided that the provisions of paragraph (e) (2) (iii) restricting replacement of equipment were strictly followed and provided, also, that the aggregate demand of installed heating equipment was not increased by additional equipment installed after November 30, 1942. If either of the above provisions are violated, the customer in question must apply to the OWU for relief.

(4) Q. A customer owns a house with gas-steam radiators installed. Last year he rented it to a tenant who did not use the gas-steam radiators but heated instead with a coal base-burner. The tenant has now moved out, taking the base-burner with him. Will a new tenant now be permitted to accept deliveries of gas for the operation of the gas-steam radiators?

A. Yes, provided that the radiators had not been removed and had remained installed during the previous tenancy. If the radiators had been removed to make room for the coal base-burner, it would constitute a physical conversion from gas to coat heat and the conversion back to gas would now be prohibited by the provisions of paragraph (e) (2) (i).

(5) Q. A gas and a coal furnace have been installed side by side in the same basement for years. Coal has been used as the main fuel, but the coal furnace is now beyond repair. Will the customer be permitted to accept deliveries of gas for the operation of the gas furnace?

A. Yes.

(6) Q. A contractor built a house and installed a gas furnace prior to the effective date of Limitation Order L-31. The new purchaser of the home finds that the gas furnace is too small to adequately heat the premises. Is the contractor permitted to replace the existing furnace with another of larger capacity without applying to the OWU for the increased deliveries of gas?

A. No.

(7) Q. A residence was heated with a large gas circulating heater until last spring. During the summer of 1942, the owner remodeled the premises, removed the gas circulating heater, and installed a coal furnace. He later found that the coal heating system did not heat the bathroom satisfactorily. Will he now be permitted to install a gas-fired bathroom heater without applying to the OWU?

A. No.

(8) Q. A building has been vacant for about four years. The heating boiler is equipped with a gas conversion burner. Will a new tenant now be permitted to accept deliveries of gas for the operation of the gas conversion burner?

A. Yes, provided that the conversion burner had not been removed during the period of vacancy.

(9) Q. "A" owns a store which is heated with a gas-fired conversion burner. He moves to a new location and takes the conversion burner with him. "B" rents the store and installs his own conversion burner which he brought with him. Will "B" now be permitted to accept deliveries of gas for the operation of the conversion burner without applying to the OWU?

A. No, nor will "A" be permitted to accept deliveries of gas at his new location without making application to the OWU.

(10) Q. A customer has accepted deliveries of gas for the operation of a 10 H.P. boiler on the third floor of a building prior to the effective date of L-31. Due to a change in process requirements, it now becomes necessary to use steam in another part of the building, although the total usage of steam will not increase. Will the customer now be permitted to install another 5 H.P. gas-fired boiler and reduce the burner capacity of the existing boiler 50 per cent without making application to the OWU?

A. Yes.

(11) Q. A customer has fired six large box annealing furnaces with natural gas for a number of years prior to 1939. The furnaces were maintained in operating condition but have not been used since 1939 and were not in actual operation on March 1, 1942. Will the customer now be permitted to accept deliveries of gas for the operation of the above furnaces without applying to the OWU?

A. Yes.

(12) Q. A customer has operated three small gas-fired boilers, with an aggregate maximum demand of 2,000 cubic feet per day, for a number of years. He now moves to another location where gas service is available. Will he now be permitted to accept deliveries of gas for the operation of the three boilers at the new location without applying to the OWU?

A. Yes.

(13) Q. A customer has operated three gas-fired boilers with an aggregate maximum demand of more than 5,000 cubic feet per day for a number of years and now moves to another location where gas service is available. Will the customer be permitted to accept deliveries of gas for the operation of the same three boilers at the new location without applying to the OWU? Since Form PD-672 is required for an increase in gas delivery and, in this case, there is no increase, must an application be filed with OWU and if so, what form should be used?

A. The gas requirements of the customer are considered to be a new or increased delivery at the new premises, and an application for such deliveries must be filed on Form PD-672.

(14) Q. A customer installed two small forging furnaces in July of 1942 with an aggregate maximum demand of 6,000 cubic feet per day. No application was filed since the Director General for Operations had, in Administrative Letter No. 4, approved in advance deliveries up to 10,000 cubic feet per day for non-residential uses other than space heating. The customer recently increased his operating schedule on the forging furnaces from 8 to 24 hours per day and his maximum daily demand has now increased to 18,000 cubic feet. Is it necessary for the customer in question to apply to the OWU for the increased deliveries of gas and how should the application be made?

A. The customer must apply on Form PD-672 for increased deliveries amounting to 12,000 cubic feet per day.

(15) Q. A customer installed one small forging furnace in July of 1942 with a maximum demand of 3,000 cubic feet per day and this delivery was made by the utility, without application, pursuant to Adminitrative Letter No. 4. The customer has recently increased his operating schedule on this furnace from 8 to 24 hours per day and now requires a maximum daily demand of 9,000 cubic feet. Is it necessary for the customer in question to apply to the OWU for the increased deliveries and how should the application be made?
A. The customer must apply on Form PD-672 for increased deliveries amounting to 6,000 cubic feet per day.

(16) Q. A new restaurant opened up in the summer of 1942 with installed cooking and water heating equipment having an aggregate maximum demand of 1,000 cubic feet per day, and the deliveries were made by the gas company pursuant to Administrative Letter No. 4. The restaurant now desires to expand its facilities and install new cooking equipment with an increased demand of 4,000 cubic feet per day, or a total demand of 5,000 cubic feet per day. Is it necessary for the customer to apply to the OWU for the increased deliveries?
A. No, the Director of the Office of War Utilities has approved in advance, in Administrative Letter No. 14, new or increased deliveries up to 5,000 cubic feet per day for non-residential uses other than space heating, provided that such new or increased deliveries plus the amount of deliveries, if any, actually made to the consumer pursuant to Administrative Letters No. 4 and 13 do not exceed 5,000 cubic feet in any one day.

(17) Q. Two large continuous gas-fired enameling furnaces have been idle for two years. The customer now has a war contract and wishes to resume the use of gas in these furnaces. Will the customer be permitted to accept deliveries of gas for the operation of the equipment in question without applying to the OWU?

A. Yes.

(18) Q. A large continuous enameling gas-fired furnace with a maximum demand of 100,000 cubic feet per day has been idle for two years. The customer now has a contract to make shells and desires to install a gas-fired annealing furnace with a maximum demand of 50,000 cubic feet per day. Is it necessary for the customer to apply to the OWU for permission to replace the enameling furnace with an annealing furnace, both gas-fired? If so, should the fact that a demand of 100,000 cubic feet per day has been discontinued be mentioned in the application form?
A. Yes, an application must be filed on Form PD-672 for the deliveries of gas required for the new process or for the operation of new equipment which is not used for the same purpose as the enameling furnace. The reduction in demand from 100,000 cubic feet per day to 50,000 cubic feet per day should be noted under "Remarks" on Form PD-672. It is always helpful, in filling out application forms, to include as much pertinent detail as possible in order to give the analysts who process the applications a complete and concise estimate of all of the factors involved.

(19) Q. A continuous gas-fired annealing furnace with a maximum demand of 100,000 cubic feet per day has been idle for two years. The customer now has a war contract and wishes to replace the old annealing furnace with a more efficient, insulated, modern type of furnace to be used for the same purpose but with a maximum demand of 75,000 cubic feet per day. Will the customer be permitted to accept deliveries of gas for the operation of the new furnace without applying to the OWU?
A. Yes, provided that the new equipment replaces the same type gas-fired equipment of equal or greater capacity previously installed or operated by the same consumer at the same premises for the same purposes.

(20) Q. A small war plant uses gas for industrial heat treating. Soon after November 30, 1942, new heat treating equipment was added with an increased demand of 6,000 cubic feet of gas per day and an application for the increased deliveries was approved by the WPB. The customer now wishes to add more heat treating equipment with an increased demand of 2,000 cubic feet of gas per day.

Will the customer be permitted to accept deliveries of gas for the operation of the newly added equipment without making application to the OWU?

A. Yes, Administrative Letter No. 14 approves in advance deliveries up to 5,000 cubic feet of gas per day for non-space heating uses to any non-residential consumer who has not obtained previous deliveries by advance approval pursuant to Administrative Letters No. 4 and 13.

(21) Q. A small industrial plant moves its office from the ground floor to the second floor. The new office has almost twice the space as the old office, but, because of insulation and storm windows, the heating requirements are no greater. The old office was heated with an obsolete circulating type of gas heater with an input capacity of 60,000 Btu. The new office is long and narrow and, in order to obtain uniform heating, it is necessary to install two small circulating gas heaters, each with an input capacity of 30,000 Btu. Will the customer be permitted to accept deliveries of gas for the operation of the two 30,000 Btu heaters without making application to the OWU?

A. Yes, provided that the 60,000 Btu heater is disconnected and removed from the premises.

(22) Q. The owner of a bakery using gas in its ovens and coal for steam generation and space heating plans to move to another location where gas service is available. The aggregate maximum demand of the ovens is 8,000 cubic feet of gas per day and this demand would remain the same at the new location. Will the customer be permitted to accept deliveries of gas for the operation of the same bake ovens at the new premises without making application to the OWU?

A. No, the delivery of gas involves a new customer and new premises and is considered to be a new and increased delivery of gas to those premises. Since the delivery exceeds the 5,000 cubic feet per day approved in advance by Administrative Letter No. 14, an application must be filed on Form PD-672.

(23) Q. In March of 1942, an Ordnance plant installed a number of furnaces for heat treating 20 mm. brass cartridge cases, and WPB *immediately* approved their application for new deliveries of gas to operate the furnaces. Before going into continuous production, the plant changed its process to the manufacture of steel cartridge cases and more gas is required in the same furnaces to meet production requirements. Will the consumer be permitted to accept the increased deliveries of gas, if the increase is more than 5,000 cubic feet per day, without making application to the OWU?

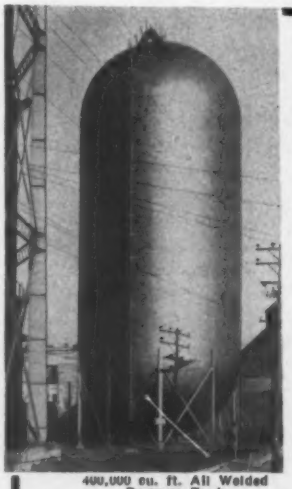
A. Deliveries of gas for the operation of the equipment specified in the original application are limited to the maximum daily volume set by the Director General for Operations of the D.O.W.U. in the letter of allocation which approved the consumer's application. The consumer is entitled to exceed that daily volume by 5,000 cubic feet per day pursuant to Administrative Letter No. 14, provided that he has not already received increased deliveries of more than 5,000 and less than 10,000 cubic feet per day pursuant to Administrative Letters No. 14 and 13. If the increased deliveries exceed 5,000 cubic feet per day, the consumer must make application to the OWU for the increase. Such applications for increases in delivery are filed on Form PD-672, whether they are occasioned by (a) new equipment, (b) increased hourly use, or (c) process changes.

(24) Q. If an approval of new deliveries of gas to an industrial plant is granted by the OWU, and later on it is found that the project does not materialize, should notification of this fact be made to the OWU?

A. Data of this kind have not been specifically requested by the OWU, but if a considerable volume of gas is involved, enough to influence future allocations of gas in the area affected, it is advisable to report such facts.

(25) Q. A storeroom is heated with a gas furnace. Two private offices are built inside this storeroom, utilizing 25 per cent of the storeroom's space, and small gas heaters are installed in each of the two offices. Will the customer be permitted to accept deliveries of gas for the operation of the two small additional gas heaters without making application to the OWU?

A. No, unless the combined aggregate input capacity of all heating equipment in the storeroom, including the two added heaters, is equal to, or less than, the input capacity of the furnace which was installed prior to the effective date of the Order.



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War Production Board and Other Administration Orders

Part 4500—Electric, Gas, Water and Steam Utilities—Materials

(Supplementary Utilities Order U-1-b as Amended Feb. 25, 1943)

4500.3 **Supplementary Utilities Order U-1-b.** Notwithstanding the provisions of paragraph (h) of Utilities Order U-1, gas and electric service connections may be made by producers to permit the operation of a gas or electric range in the dwelling of a domestic consumer, provided that the conditions stated in either paragraph (a) or paragraph (b) hereof, and the conditions stated in paragraph (c) hereof, are satisfied:

(a) In the case of an application for an extension to serve a gas or electric range which the applicant has used in a dwelling which he previously occupied, the dwelling proposed for connection is not equipped with a range of any kind; or

(b) In case of an application for an extension to serve a gas or electric range which the applicant has not used in a dwelling which he previously occupied.

(1) The dwelling proposed for connection is not equipped with a range of any kind, and

(2) Complete facilities to range location are not installed for serving either a gas range or an electric range; and

(c) Connections (including any additional service drop, primary, secondary, and ground conductor, but excluding service entrance conductor and interior wiring) can be made with an expenditure by the producer of not more than the following amounts of material:

(1) In the case of an electric range, 15 pounds of copper in conductor, or

(2) In the case of a gas range, 75 feet of one and one-quarter inch steel pipe, or any length of steel pipe weighing in the aggregate not more than 170 pounds.

Supplementary Utilities Order U-1-d, as Amended March 8, 1943

4500.5 **Supplementary Utilities Order U-1-d.** Notwithstanding the provisions of paragraph (h) of Utilities Order U-1, electric, gas, and water connections may be made by producers to premises, the construction or remodeling of which is authorized under paragraph (b) (4) of Limitation Order L-41 by the issuance of a specific direction, order, certificate, or other authorization for construction, provided that the following conditions are satisfied:

(a) **Industrial or commercial consumers.** (1) The cost of material for such utility connections (including service drop or service pipe and any portion built by or for the consumer) is less than $1,500 in the case of underground construction, or $500 in the case of other construction;

(2) Connections can be made with an expenditure of not more than 60 pounds of copper in conductor for electric service, 250 pounds of iron or steel pipe for gas service, or 250 pounds of iron or steel pipe for water service, and the producer has so certified in a letter addressed to the War Production Board and attached to the builder's application for L-41 approval.

(b) **Domestic consumers.** (1) The cost of material for such utility connections (including service drop or service pipe and any portion built by or for the consumer) is less than $1,500 in the case of underground construction, or $500 in the case of other construction;

(2) The electric, gas, or water connections can be made within the limits established by the Housing Utility Standards, issued by the War Production Board, and the producer has so certified in a letter addressed to the War Production Board and attached to the builder's application for L-41 approval.

OPA Sets Industrial & Commercial Service Pricing Methods

Supplementary order No. 38, as amended issued March 19, 1943 provides that: Any seller of services, other than a seller at retail, who in March 1942 had a fixed practice of making accommodation sales of service is hereby authorized to charge, and any person, other than a purchaser at retail, is hereby authorized to pay rates, charges, fees and compensation at an amount not exceeding the aggregate of the cost of direct labor at legally permitted wage rates and materials at actual cost to the seller or at the ceiling price thereof, whichever is lower, for the service sold or supplied.

(b) As used in this Supplementary Order, "accommodation sales of service" means a sale made, other than at retail, for the convenience or benefit of the purchaser at the aggregate of the cost of direct labor at legally permitted wage rates and ma-

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terials at actual cost to the seller or at the ceiling price thereof, whichever is lower. It does not include a service rendered without charge, or for less than such costs, or in connection with the sale of any other service or commodity other than an accommodation sale.

Part 1167—Liquefied Petroleum Gas Equipment

(Limitation Order L-86 as of September 30, 1942)

1167.1 **General Limitation Order L-86-(a) Applicability of Priorities Regulation No. 1.** This order and all transactions affected thereby are subject to the provisions of Priorities Regulation No. 1 (Part 944), as amended from time to time, except to the extent that any provision of this order may be inconsistent therewith, in which case such provision shall govern.

Definitions. For the purpose of this order:

"Liquefied petroleum gas equipment" means equipment (other than marine, rail, pipeline or truck facilities used in transportation of liquefied petroleum gas and other than equipment used in refining), or parts thereof, used to contain, distribute, or dispense butane, propane, propylene, butene, butylene, or any combination or dilution thereof, commonly known as liquefied petroleum gas.

"Refining" means the operation of a plant or plants for the production of finished and unfinished petroleum, including blending plants which blend neutral, bright-stocks and long residuum to finished S.A.E. grades.

"Material" means any commodity, equipment, accessory, part, assembly, or product of any kind.

Subject to subparagraph (8), "maintenance" means the upkeep of liquefied petroleum gas equipment in a sound working condition with a minimum expenditure of material.

The terms "maintenance" and "repair" do not include either of the following:

(i) The use of material for the improvement of liquefied petroleum gas equipment through the replacement of material in the existing installation, unless the equipment which is replaced is beyond economic repair or has been rendered unusable by fire or other hazard or natural cause and is scrapped or junked;

(ii) The use of material for additions to or expansion of liquefied petroleum gas equipment.

(c) **Conservation of liquefied petroleum gas equipment.** Subject to the exceptions in paragraph (d) hereof, no person shall install liquefied petroleum gas equipment. Subject to the exceptions of paragraph (d) hereof; no person shall deliver or otherwise supply, or cause to be delivered or otherwise supplied, any liquefied petroleum gas equipment for installation purposes.

(d) **Exceptions.** The provisions of paragraph (c) hereof shall not apply in the following instances:

(1) To any case where material is to be used by a person for the maintenance or repair of liquefied petroleum gas equipment.

(2) To any case where actual physical work of installation of liquefied petroleum gas equipment had commenced prior to January 14, 1942; **Provided,** That such work of installation must then have been scheduled for completion and be actually completed on or before May 15, 1942;

(3) To any case where liquefied petroleum gas equipment is to be installed which liquefied petroleum gas equipment was installed and in actual use prior to April 1, 1942, and which liquefied petroleum gas equipment was subsequently withdrawn from such use;

(4) To any case where containers of equal capacity are exchanged (or a container replaced by one of lesser capacity) on the premises of any person in the normal course of distribution of liquefied petroleum gas;

(5) To any case where the Director General for Operations, War Production Board, has determined that the use of liquefied petroleum gas equipment is necessary and appropriate in the public interest and to promote the war effort (including any such determination made under Conservation Order M-68-c). Application for such a determination shall be made on Form PD-397 (Revised) and filed with the Director General for Operations, Washington, D. C.

(e) **Required certification.** Any person acquiring liquefied petroleum gas equipment shall endorse on all copies of each purchase order or contract for such equipment which are placed with any person a statement in the following form signed manually or as provided in Priorities Regulation No. 7 (944.27) by an official duly authorized for such purpose:

The liquefied petroleum gas equipment which is ordered in this purchase order (or contract) is to be used in conformity with the provis-

From "Way Down Under"
come the highest grade
of selected lambskins.
New Zealand Skins are noted for their small pores and fine texture. Those we treat conform to definite standards of thickness and absence of holes, scratches or blemishes.
These we use in the manufacture of
"COLONIAL BRAND"
RECHROME METER LEATHER
a product which has been recognized with universal acceptance by the Gas Industry for over 50 years.
Our leathers stand up in the meter under all variable conditions. They are strong, pliable and unaffected by heat, cold or dampness.
We also manufacture Oiled Meter Leather for Iron and Tin Case Meters, Governors and Regulators.
Superior to any substitute offered for this purpose.
NEW ZEALAND
Besse, Osborn & Odell, Inc.
129 SOUTH ST., BOSTON, MASS.
Sales Representatives
Bankart & Samuelson
177 WILLIAM ST., NEW YORK
Wilder & Co.
1038 CROSBY ST., CHICAGO

ions of General Limitation Order L-86, with the terms of which order the undersigned is familiar.

Such endorsement shall constitute a representation to the War Production Board and the person with whom the purchase order or contract is placed that the liquefied petroleum gas equipment obtained under such purchase order or contract will be used in accordance with the provisions of this order. Such person shall be entitled to rely on such representation unless he knows or has reason to believe it to be false. No person shall, in the absence of such endorsement, deliver or otherwise supply, or cause to be delivered or otherwise supplied, any liquefied petroleum gas equipment.

This paragraph shall not apply in either of the following cases:

(1) To the acquisition of liquefied petroleum gas equipment by any person for maintenance and repair, as described in paragraph (d) (1) above, where the equipment to be maintained or repaired is used exclusively by such person for domestic cooking and heating, or,

(2) In the case of exchange or replacement of containers as described in paragraph (d) (4) above.

J. A. Krug, Vice-Chairman W.P.B.

J. A. Krug, Director of the Office of War Utilities, is named Vice-Chairman of the War Production Board in charge of Materials Distribution. He also becomes chairman of the Requirements Committee and will continue to serve as War Utilities Director.

Mr. Krug, whose home was in Madison, Wisconsin, before he entered government service, was formerly Director of Power for the Tennessee Valley Authority. He was appointed head of the Power Division of the Office of Production Management in the summer of 1941, and held the same position with WPB until he became Deputy Director General and head of the Distribution Bureau last August. He was appointed Director of the Office of War Utilities in February.

A.G.A. Meritorious Service Medal

Supported by an endowment in memory of Mr. Walter R. Addicks, the American Gas Association Meritorious Service Medal is bestowed with discrimination making it an award to be greatly coveted.

Consisting of a gold medal, button, and certificate, this award by the Executive Board is the gas industry's official recognition of the gas company employee who has performed the most meritorious deed during the year. It is awarded for meritorious and conspicuous judgment, intelligence or bravery, either in the plant or work of any gas undertaking, or having to do with the handling of the materials of manufacture or of the production, manufacture or distribution. It is available to an employee of any manufactured gas company or natural gas company or manufacturer company member of the Association. War conditions make it particularly suitable this year and will be especially considered by the Award Committee.

To qualify, the deed must have been performed during the period beginning July 1, 1942, and ending June 30, 1943. Applications for the 1943 Award should be sent to Association Headquarters on or before August 1, 1943. Forms for the application will be furnished upon request.

Charles A. Munroe Award

The Charles A. Munroe Award of the American Gas Association is offered again this year. The award consists of a substantial sum of money and a permanent certificate and is made annually by the Executive Board to the individual judged to have made the most outstanding contribution toward the advancement of the gas industry.

An accomplishment on any phase of the gas business may be considered. For instance, since the first award in 1929, it has been given for developments in refrigeration; labor saving accounting; rate making; dealer cooperation; sales expansion; public relations; research; change-over from one to another kind of gas; promotion on the national advertising program; scientific developments in connection with gas measurement; gas compressors, etc. Special consideration will be given to war conditions.

Applications may be sent to Association Headquarters at any time but they must, under the rules, be received by August 1, 1943.

Canadian Notes

The fuel controller of the Ontario Government, Toronto, has just issued an order for the Union Gas Company to sell to the Central Pipe Line Company a total of 50,000 cubic feet of gas per day for a total of ten days out of each month. The additional supply will bring to normal the pressure required for cooking purposes, same having been rather low during the colder weather of the winter. The Central Pipe Line Co. has stated that the 500,000 cubic feet of gas per month will permit them to occasionally rest their own wells and will probably be sufficient to give everybody enough gas for cooking purposes and for heating water. Electricity has been found expensive for both purposes as well as much less efficient.

The first gas produced in the new $2,000,000 gas plant erected by the Federal Government and operated by the United Gas and Fuel Co., Hamilton, Ont., is now in operation. T. Pater Pinckard, general manager of the company, states that the capacity of the new unit is 9,000,000 cubic feet daily in addition to the present output of 11,000,000 feet per day from the United Gas Company.

REED'S 4 WHEEL Razor Blade Pipe Cutters

IDEAL FOR ANY TRENCH OR OTHER CLOSE QUARTER JOBS

$5.46 F. O. B. ERIE

Capacity ½" to 2"

Weight 5 lbs.

The REED FOUR WHEEL Cutter operates with a short back and forth motion through only one-third of a circle. Each of the four wheels exerts the same pressure on the pipe, and all 4 therefore cut evenly and completely through the pipe at the same time.

Equipped with Reed special alloy RAZOR BLADE Wheels, which cut with remarkable ease, leave little burr, and have a long life of useful service.

A sample cutter for test and trial may be ordered on memorandum invoice, to be paid for if retained or returned for credit if unsatisfactory. Try it once, and you will use no other.

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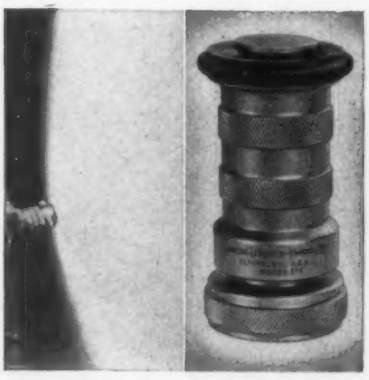
New Equipment and Appliances

All-Spray Nozzle

A new water spray nozzle, the "Alfco-spray," is offered by American-LaFrance-Foamite Corporation, Elmira, N. Y. From the shut-off position, a slight turn of the tip immediately gives a cone spray of 40 degrees. Further slight rotation produces increasing cones up to full curtain of 150 degrees, with reversal back to shut-off without any intervening straight stream. This model finds favor with public utility companies, as it prevents the possibility of a solid water stream being applied inadvertently.

Alfcospray range from 40° to full curtain of 150°

The nozzle is known as Model 10F. It can be furnished for any 2½" hose thread, also for Underwriters' tip thread, 2" hose thread, or 1½" thread.



Alfcospray Full Curtain — Alfcospray Model 10F

Combined Crane and Truck

An industrial transportation unit which performs not only the separate functions of a load carrier, a crane and a tractor but also combines the typical operations of all three, is made by Elwell-Parker Electric Company, Cleveland, Ohio.

As a load carrier, the mobile unit has an unobstructed platform 84 in. long x 40 in. wide x 25 in. high, with a rated capacity of 6,000 lb. As a crane handling up to 2,000 lb. at 42 in. on the boom, it lifts and transports castings or other heavy, bulky objects. As a tractor, it first loads the trailers by means of its own crane, then hauls them at speeds up to 5 m.p.h.

Truck operates with 2-wheel drive and 4-wheel steer. The frame is made up of heavy section formed plates welded into a rugged one-piece structural unit embodying the control dash. The boom is of special design, of heavy formed channel members rigidly reinforced with tie rods, lattice bars and gusset plates and slews around a 3½ in. diameter alloy steel pillar.

Industrial Crane and Truck

Aneroid Manometer

The absence of mercury or other liquid from a recent development of the Taylor Instrument Companies, Rochester, N. Y., removes the possibility of product contamination and the hazard of mercury being blown due to line surges or carelessness.

Replacing the stuffing box is a new torque tube assembly which gives a completely closed system and is designed so as to eliminate friction and lubrication. Friction, lost motion and wear are further reduced by the absence of internal pivots and springs.

It is available for all types of indicating and recording meters and controllers and is supplied for standard ranges between 20 and 500 inches of water. The range can be changed right on the job by substituting precalibrated torque tubes.

For Flow or Liquid Level

"Fuse-Bond" Process

Metallizing Engineering Co. 29-28 41st Ave., Long Island City, announces the revolutionary new Fuse-Bond Process, and equipment for its application, whereby machine components and similar metal parts now may be prepared for metallizing electrically.

Metco Fuse-Bond Unit

Operating on any 110 or 220 volt, single phase power line, this equipment fuses a rough deposit of electrode metal into the surface to be metallized. Electrodes are applied to the work with a special holder which uses up to six electrodes at a time, depending on the size and nature of the part to be prepared.

The Unit is contained in a cabinet measuring 24" high. Weight complete, 170 lbs. Further information in Bulletin 44.

Domestic Gas Range Oven Dehydration

By

William H. Colwell

News Service Manager
Public Service Company
of Northern Illinois
Chicago, Ill.

DEHYDRATION — drying — one of the oldest known methods of food preservation, may return to favor with thousands of war-time housewives this summer as a result of experiments just completed by the Public Service Company of Northern Illinois.

Working at the Company's gas headquarters, engineers and home service economists have successfully dehydrated a dozen varieties of fruits and vegetables in the oven of an ordinary gas range.

With food shortages becoming more critical and prospects of more and more items being added to the ration list, city and suburban dwellers who have been harvesting their vegetables for a generation with a can-opener, will soon be turning to the spade, digging up back yards, vacant lots, and park plots to plant Victory gardens.

The successful Victory gardeners will not only obtain fresh vegetables to balance their diets this summer, but thousands will have a surplus to preserve for next winter's use. It's for this group that the Public Service experts have been doing their gas-oven research, now completed after months of painstaking experiment.

With canning equipment on the scarce list, they believe they have the answer to this year's problem of food preservation for any housewife who has an ordinary gas range in her kitchen, as the process they have developed uses no critical materials. The only thing needed, assuming you have the gas range oven to begin with, is a wood frame with some ordinary cotton curtain netting stretched over it.

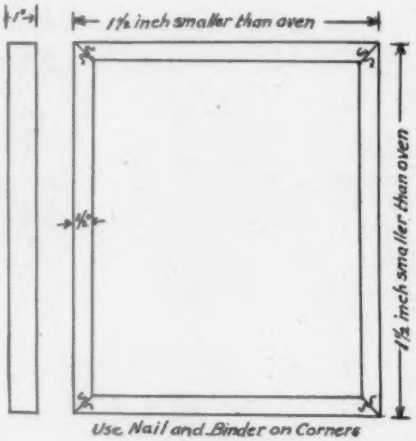
To construct the tray take inside dimensions of gas oven and construct tray so that outside dimensions are 1½ inches smaller than inside dimensions of oven. Any ordinary wood will do.

Cover with a single thickness of ordinary cotton curtain netting stretched tightly and secured to sides of frame with common carpet or thumb tacks. Before tacking cloth to frame, stretch and tack two strings across frame diagonally, to prevent cloth from sagging. Cloth may be washed without removing from tray and should be immediately dried in oven.

This home-made tray which holds the vegetables to be dehydrated, can be placed on top of the regular metal rack already in the oven and you're all set to start dehydrating operations right in your own kitchen.

What to Dehydrate

The best vegetables for drying are sweet corn, carrots, string beans, spinach, beets, onions, and peas. Cabbages, pumpkin, and squash can be dehydrated; however, such bulky products are better kept in a root cellar.



Fruits most commonly dried are apples, pears, peaches, apricots, cherries and plums.

Preparation For Drying

Select only fresh, ripe, clean, sound foods—those at the right stage for table use.

Before drying, vegetables should be precooked in steam or boiling water. Tests indicate that vegetables precooked by steam are higher in food value than those precooked in water.

Do not peel carrots and beets. After steaming, the skin slips off easily, and the mineral content is unimpaired.

Most fruits should be dipped in salt water solution (4 tsp. salt to a gal. of water) before drying to help prevent discoloration. Fruits should be cut into thin (¼ inch), uniform slices before drying; this assists evaporation of moisture.

Things to Remember— Before You Start Drying

Speed in handling, from the time you pick the vegetables from the garden, until you seal them in storage containers, is of the essence of successful drying. Wilted, stale, or overripe vegetables do not dry well.

How to Steam Foods For Drying

Put a small amount of water in any kettle or container. Turn gas on high until steam appears.

Place prepared food in wire basket or colander and set on a rack above the level of boiling water in container. Cover the cooker with a tight fitting lid. Keep the water boiling briskly for the length of time recommended for that product in the Dehydration Chart.* There is more danger of undercooking than of overcooking, so steaming longer than recommended is better than not long enough.

How to Dry in Gas Oven

Dried vegetables retain 10% or less of their moisture; dried fruits 24% or less. The dehydrated product weight is from one-fourth to one-ninth that of fresh food.

Light your gas oven a few minutes before the steaming process is completed. Set oven regulator at low setting. Prop oven door open about eight inches. The best temperature for drying is 150 degrees. A thermometer is helpful in determining the oven temperature, but if not available, test by the feel of the material on trays. It should be moist to the touch and cooler than the air flowing over it.

How to Prepare Dried Foods For Storage

The storing of dehydrated foods requires careful attention. Almost all of the moisture has been removed, and they must be stored in a manner that will not permit moisture to return.

Place single meal servings of the

**This chart appears in Home Service Bulletin of the Public Service Company of Northern Illinois, Chicago, Illinois.*

product in separate moisture-proof bags. When bags are sealed, place in large jar, crock, or metal container that can be sealed tightly. Store in dry, cool, dark place.

As needed, remove bags from container, examining what is left each time. If it seems that moisture is reaching the food, remove and open bags. Place food in 165 to 180 degree oven and reheat for ten or fifteen minutes, then reseal in bags. This precaution may prevent spoilage caused by faulty original storing.

How to Prepare For Table Use

Cover dehydrated foods with cold water and soak about three hours until they regain their original plump shape and form. Cook until tender in the water in which soaked. Most of the liquid will be absorbed during cooking.

Sweeten fruits to taste.

Season vegetables.

Vegetables have been precooked, therefore can be cooked for the table in about one-half the ordinary time. Leafy green vegetables need not be soaked; cook them until tender in a small amount of water.

What about the cost? The average time for dehydrating is about six hours. At a 150° temperature, a six-hour dehydration job will cost the average householder about six cents, or less than one cent per pound of vegetables.

Vegetables dehydrated by the process appear to retain food values comparable with other methods of preservation. And the taste? "Just like fresh vegetables," say the researchers who have been eating the products of their own experiments.

Ruthenburg Appointed State Chairman Economic Development Committee

Louis Ruthenburg, president of Servel, Inc., Evansville, Ind., has been appointed Indiana State Chairman of the Committee for Economic Development. The appointment was announced by Paul G. Hoffman, president of Studebaker Corporation, South Bend, Ind., who is serving as national chairman of the committee.

The purpose of the committee is to lay ground work for postwar employment by private industry. The committee, Mr. Hoffman said, is not a government agency, although it was created at the suggestion of Jesse H. Jones, Secretary of Commerce, and is working with the Department of Commerce and other government agencies.

She's Really "COOKIN' WITH GAS"

SIX STEPS IN DEHYDRATION

Miss Honore O'Brien, home service consultant, Public Service Company of Northern Illinois, illustrates carrot dehydration in oven of ordinary kitchen gas range. Under direction of company gas engineers, Miss O'Brien has successfully dehydrated a dozen varieties of Victory Garden fruits and vegetables in gas range oven.

FOR SALE

4'-6" x 4'-0" x 4'-0" Class B. Backrun Steere Water Gas Machine complete with Blower, Exhauster, Multiple Washer, Washer-Cooler Tower, Pumps (2 Oil—3 Circulating Water), Station Meter, Brown Pyrometer on Control Panel, Electric Coal Hoist, 10 M.C.F. Relief Holder, Piping, Valves, Double Purifier Box, etc. All in good working condition. For prices write: Oneida Gas Company, Rhinelander, Wisconsin.

News of the Gas Industry

C. H. Waring Becomes General Manager of Wyandotte Company

Clarence H. Waring, who for many years has been general superintendent of the Kansas City Gas Company and The Wyandotte County Gas Company, has been named general manager of the Wyandotte company, succeeding the late William H. McKenzie, who died February 12.

Announcement of Mr. McKenzie's successor was made in Kansas City, Kans., on March 9, by Benjamin C. Adams, president of the Wyandotte Company.

Mr. Waring has worked in an executive capacity in the Kansas City, Kans., organization, with the exception of a few years since 1905 and during all those years was closely associated with Mr. McKenzie. For a number of years he has been a director of the Wyandotte company as well as a director of The Gas Service Company.

Murduck Succeeds Waring

T. J. Strickler, vice-president and general manager of the Kansas City Gas Company, has announced that R. K. Murduck will succeed Mr. Waring as general superintendent of the company. Mr. Murduck has worked in the Engineering Department of the Kansas City Gas Company since 1916, and since 1920 has been general foreman of the Street Department.

Mr. Murduck joined the Kansas City Gas Company in 1916 and he worked first as a draftsman in the Engineering Department. In 1919 he was placed in charge of the plant at First and Gillis streets, which included the supervision of the company's store room, meter shop and garage. In 1920, he succeeded Earl Keeler as general foreman of the Street Department and he remained in this position until he was promoted by Major Strickler to succeed Mr. Waring as general superintendent.

Murduck's position at the Kansas City Gas Company has been taken by Charles D. Taft, who has been working in the Engineering Department of the Kansas City Gas Company since 1925.

He entered the Henry L. Doherty Junior Engineering School at Bartlesville and received his training in the refining division at Cushing, Tulsa and Ponca, Okla., and later was transferred to the gas division. He then worked as a resident engineer in the gas division in the El Dorado, Kans., territory. A year later he was transferred to the Engineering Department of the company's New York office and in 1925 he was transferred to the Engineering Department of the Kansas City Gas Company.

Robison Joins Cincinnati Gas & Electric Co.

The Cincinnati Gas & Electric Company announces the appointment of Arch Robison as Manager of its Middletown division. He succeeds L. E. Marshall, who is retiring after 27 years of service in the position, and a total of 42 years in the utility business.

Arch Robison

Robison brings with him a long and varied experience in engineering and management. He comes to Middletown from North Carolina, following the completion of an eleven million dollar naval munitions plant, where he held the responsible position of general manager on design and construction.

He served as city manager of Celina, Ohio, in charge of the municipally owned electric and water utilities and other departments of that city. For nine years he was vice-president and general manager of an electric public utility and transportation system in northern Ohio, with headquarters at Findlay and Wooster. For 10 years he held various positions with utility companies in Montana. Service with the state of Ohio occupied Robison's attention for three years, during which time he was chief engineer of the Public Utilities Commission of the State of Ohio.

With such well known engineering concerns as Sanderson and Porter, engineers and constructors; the J. G. White Engineering Corp.; the United Engineers and Constructors, and the engineering firm of Charles T. Main, Inc., of Boston, Mass., Robison had broad experience supervising numerous industrial and power plant installations. He is a graduate of the University of Minnesota with an electrical engineering degree.

In succeeding Marshall, Robison now supervises the operations of the company's gas and electric service systems in Middletown, Hamilton, Franklin, Oxford, and their surrounding territories.

Campbell Elected Director of Niagara Hudson Power Corp.

George H. Campbell, of Oswego, New York, was recently elected a director of Niagara Hudson Power Corporation. Mr. Campbell is president of George H. Campbell & Co., Inc., of Oswego.

Mr. Campbell is also a director of Central New York Power Corporation, one of the principal operating companies of the Niagara Hudson System. He is a former president of the Oswego Harbor and Dock Commission and a former president of the Oswego Chamber of Commerce.

Gardner in Govt. Service

Ben H. Gardner, Chairman of the Industrial and Commercial Gas Section, is on leave from the Columbia Engineering Corporation of which he is Vice President and is serving the government in the war effort as Deputy Director, Requirements Division, Surgeon General's Office.

Mr. Gardner, who is continuing his leadership of the Industrial and Commercial Gas Section, is located in the Maritime Building, Washington, D. C.

Institute of Gas Technology

Seventeen students have been named to receive fellowships at the Institute of Gas Technology at Illinois Institute of Technology. They will begin training for advanced degrees in gas technology.

The appointees represent 14 colleges in ten states and were chosen from among nearly 150 candidates interviewed at 37 schools.

Graduates in chemistry and chemical engineering, the students will receive an annual stipend of $1135 to cover expenses during their study at the Gas Institute. During the summer they will be employed in the gas industry as a part of the required curriculum.

The advanced degrees for which the fellows will study are awarded by Illinois Tech, class work all being taken at the Gas Institute. The training program is designed to prepare the fellows for key positions in the natural and manufactured gas industry, some in research, some in plant operations and others in administration.

Most of the new fellows will go directly to work in the gas industry upon graduation this spring. Two of them, however, were graduated this month in accelerated programs, and will begin work at the Gas Institute as staff research assistants on war projects until June.

Pacific Coast Women in The Gas Industry

The Pacific Gas and Electric Company now has a considerable number of women employees doing a great variety of work that formerly was done exclusively by men. It will increase the number steadily and substantially.

The purpose is twofold—to cooperate fully with the War Manpower Commission in its efforts to provide both the armed forces and the war industries with the men they require and also to make up for the fact that more than 2,000 of the company's workers have joined the colors.

Women are holding down the hitherto strictly masculine jobs of operators in power houses and substations, firemen's helpers in steam-driven power plants, meter testers and repairers, meter readers and collectors, draftsmen and mappers, photographic reproduction specialists, laboratory aides, field clerks on construction projects, packers and laborers in warehouses, coach drivers on the transportation system in Sacramento, truck drivers, elevator operators and others. They are making good, too.

These women have the same wage scales as the men, have the same hours and working conditions, enjoy the same privileges and benefits.

To train women for their new roles, the company now conducts a special free school and plans to extend the program. Also available to them are more than 100 courses offered by the Pacific Service Employees Association.

Says P. M. Downing, vice president and general manager:

"The P. G. and E. is most eager to help conserve manpower and to this end we are employing women whenever and wherever it is possible and practical to do so.

"Women already are filling men's jobs in many departments and they are doing excellent work. We were quite sure they would, because throughout the company's history women have given us faithful, intelligent and efficient service in their own spheres of activity."

Weymann Joins Barber S. S. Lines

Mr. A. H. Weymann, who recently resigned as manager of the Worthington Pump and Machinery Corporation's El Paso District Office, is now connected in an important capacity with the Barber S.S. Lines, Inc., Brooklyn, New York.

During Mr. Weymann's long period of service with the Worthington Corporation he made many friends in and out of their organization, who join in wishing him every success and happiness in his new work.

Solder in Meter Repairs

The Southern Counties Gas Company of Los Angeles recently received a favorable decision on its appeal for relief from the restrictive provisions of a War Production Board order prohibiting the repair of tin case meters.

The purpose of the Board's order was to prohibit the use of new tin. The company pointed out in its appeal that no new tin is required in the repair of their meters since they are able to salvage the solder from the meters brought in for repair.

Before the war they had been using a solder of 60% tin content. By carefully recovering this solder when stripping the meters and adding only lead and antimony, solder of a 35% tin content is obtained, sufficient to maintain the normal repair schedule.

Since it will be impossible to secure any new tin, continuance of the operation of their meter shops will require extreme care that soldering materials are not wasted.

S. E. C. Delays Hearing On St. Louis Gas Case

The Securities and Exchange Commission, at the request of counsel for North American Co., St. Louis County Gas Co., and Union Electric Co., of Missouri, postponed until April 19th the hearing formerly scheduled for March 16 on the question of the retainability of St. Louis County Gas Co. by North American.

Counsel for the utility companies had asked for a postponement for sixty days to complete preparation of their evidence. The commission, however, after examining affidavits submitted by counsel, concluded that a postponement to April 19 would afford the attorneys sufficient time for the purpose stated.

Charleston, S. C. Calls W. W. Klyce

W. W. Klyce, formerly superintendent of gas production, Pontiac Division, left the Consumers Power Company of Jackson, Mich., in February to become gas production and distribution superintendent for the South Carolina Power Company at Charleston, S. C. He had been in Pontiac almost 21 years and earlier had served with the Company for four years in Jackson. Still earlier he had been associated with gas companies in Nashville, Tenn., Macon, Ga., and Eau Claire, Wis.

Grady Padgett, formerly assistant gas production superintendent at Pontiac, has joined the Koppers Company at Beaver, Pa. His work has to do with synthetics. He had been with the Pontiac Division since March, 1930.

Natural Gas Management Conference

A Natural Gas Management Conference will take place at the annual Natural Gas Convention this year and will meet on April 28th in Hotel Gibson, Cincinnati, Ohio.

Subjects on the program of the one-day meeting will be confined to those of immediate interest to the natural gas industry at war and will deal, as the name of the Conference implies, with questions of importance to industry management.

"Problems of the Natural Gas Industry Under War Conditions" will be outlined by the chairman of the Natural Gas Section, American Gas Association, Mr. Burt R. Bay, President of Northern Natural Gas Company, Omaha, Nebraska.

The morning session will feature a symposium having to do with the relationship of the natural gas industry to the two agencies—Petroleum Administration for War and the War Production Board. Representatives of these agencies and execu the discussion, the purpose of which is to clarify the orders and rulings now directing the industry and the fields in which industry is affected by the two agencies.

"The Natural Gas Act After Four Years" will be the subject to be presented by a prominent natural gas company attorney during the afternoon session.

"Observations on Developments in the Natural Gas Industry During the War and Post-War Periods" will be approached from an economic point of view and will be discussed by a man thoroughly familiar with gas utility problems. The next speaker will direct his thoughts to industry developments of a chemical nature, looking to the future of natural gas and its derivatives, a branch of the industry which has come into increased prominence as a result of the war.

The chairman of the Program Committee for the Natural Gas Management Conference is Mr. R. E. Wertz, President, Amarillo Gas Company, Amarillo, Texas.

WANTED

Gas Holders, Pumps, Condensers, Coolers, Tanks, Boilers, Buildings, Pipe, etc.

Jos. Greenspon's Son Pipe Corp.
National Stock Yards (St. Clair County) Illinois

THE STACEY MANUFACTURING CO.

Engineers Fabricators Constructors

• Gas Holders • Gas Plant Equipment • Steel Plate Construction •

GAS HOLDER INSPECTION SERVICE

Cincinnati — Ohio

91

STACEY SINCE 1851

Years

MERRILL N. DAVIS

Merrill N. Davis, Executive Vice President and Secretary, Dresser Manufacturing Company, Bradford, Pennsylvania, died March 7th. He was 57 years old. He was born at Millbridge, Maine.

He received a public school education in Maine and during his summer vacations, while at school, he worked in the canning factories with which his father was identified.

When fifteen years of age he went to Boston, secured employment with Henry K. Barnes (now Henry K. Barnes Co.) and after two years went with the Empire Rubber Manufacturing Company of Boston, as a clerk. Two and one-half years later he became connected with the B. F. Goodrich Rubber Company, as a correspondent. Later he served as Maritime Province and Nedfoundland representative for the Company over a period of several years. He was then assigned by the company as special representative on oil and gas field mechanical rubber goods.

Merrill N. Davis

He resigned in 1916 to help organize the Rexhide Rubber Manufacturing Company, later becoming Vice President and Sales Manager. After two years with this company he returned to the Goodrich Rubber Company.

In August, 1919, Mr. Davis became associated with the Dresser Manufacturing Company, in charge of sales and advertising. In December, 1928, he was elected a Director of the company and on December 10th of that year when the company was re-organized he was re-elected a Director. On January 3, 1929, he was made Vice President of the company and in May, 1932, was given the additional title of Secretary. At the time of his death, he was Executive Vice President as well as Secretary.

Mr. Davis had been actively identified with the Association of Gas Appliances & Equipment Manufacturers since it was organized in 1935. He served as Vice President of that organization in 1935-36 and the following year was elected President.

He was a member of the American Gas Association, Pennsylvania Gas Association, New Jersey Gas Association, Pacific Coast Gas Association, Canadian Gas Association, Oil and Natural Gas Men's Association of Canada, American Petroleum Institute, West Virginia Oil & Gas Men's Association and Ohio Oil & Gas Men's Association.

A.S.H.V.E. Guide for 1943

The 1943 edition of Heating Ventilating Air Conditioning Guide is off the press. In this volume is much new information valuable to men in the engineering branches of the armed services and men in industry who are concerned with problems involving heating, ventilating, and air conditioning.

This new edition contains 48 chapters of technical data and general information, including all phases of heating, cooling, ventilating and air conditioning, and related phases of refrigeration. Much entirely new data has been added and a large part of the book revised, rewritten and rearranged.

In a total of 1268 pages this new volume includes 872 pages of technical data; 264 pages of equipment data; and the Roll of Membership of the Society. It is bound in a blue cover with gold stamping, and is available at $5.00 per copy. Thumb-indexed copies are obtainable at $5.50 each for those who desire this additional convenience.

CONVENTION CALENDAR

April

16-17 *Annual Business Meeting, Missouri Association of Public Utilities,* Elms Hotel, Excelsior Springs, Mo.

26-27 *Accounting Conference,* Cincinnati, Ohio, Hotel Netherland-Plaza.

28 *Natural Gas Management, Conference,* Cincinnati, Ohio, Hotel Gibson.

29-30 *A. G. A. Distribution Conference,* Cincinnati, Ohio, Hotel Netherland-Plaza.

May

24-25 *Joint Production and Chemical Committee Conference,* Hotel Pennsylvania, New York, N. Y.

Lincoln Electric Announces Plan To Start Workers in Their Own Business

A unique savings plan, to enable workers to start their own private business after the war, is announced by The Lincoln Electric Company of Cleveland, O.

This is one of the first concrete plans announced by an American industry to promote post-war enterprise for workers. It is effective immediately and for those who participate in it, the plan will provide a means of setting up a business that offers excellent opportunities for profitable enterprise.

The participant in the plan may employ it as a key to post-war establishment of a business such as a commercial weldery, a commercial job welding shop or an automotive welding repair shop, each of which promises a bright future.

With the announcement of "The Lincoln Welder Savings Plan" is sent an application blank for opening a savings account in the Hayden office of The Cleveland Trust Company, Cleveland, Ohio. When the coupon is returned to the bank with the first deposit in the form of a check, money order or currency, a savings passbook will be sent to the depositor, along with a form and self-addressed envelope for the next deposit. When this deposit is made, it is sent to the bank with the form properly filled out. The bank will return a receipt, along with a form for a subsequent deposit, and so on.

Commenting on the plan, A. F. Davis, vice-president of The Lincoln Electric Company, said, "As you know, the war has given workers more money to spend and fewer places to spend it—no autos, refrigerators, homes to buy. The danger, then, is a bidding-up of prices of available goods, resulting in inflation—higher costs for everything, including ships, planes, tanks and guns.

"By saving to start your own free enterprise on a sound, debt-free basis, you will be doing your part to cushion the country's shock in changing the present war set-up back into normal business pursuits."

Goodrich Wins "E" Award

The B. F. Goodrich Company at its Koroseal plant in Louisville, Ky., has been awarded the Army-Navy "E" for high achievement in the production of war materials.

GOODMAN
USED SINCE 1897
"Z" HANDLE & LOCKING SLEEVE
GAS MAIN STOPPER

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

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Catalogs

Wrought Iron Pipe. A colorful and easy-to-read technical bulletin entitled "Wrought Iron For Underground Services" has been issued by the Engineering Service Department of A. M. Byers Company, Pittsburgh.

Designed to be of service to private and municipal water works engineers, electrical and civil engineers, oil and gas operators, heating men, plant maintenance men and others, the booklet discusses the most important factors effecting soil corrosion of underground piping, weighs theory against test results and outlines installation histories of water wells, and lines, lawn sprinkler piping, oil and gas wells and lines, gasoline lines and tanks, and electrical cable conduit.

It includes many photographs of underground piping installations under varied conditions in major cities throughout all parts of the country.

Electric Drilling Rigs. These are described and illustrated with photos, charts and diagrams in a new 57-page booklet by Westinghouse Electric and Manufacturing Company. (Bulletin B-3038)

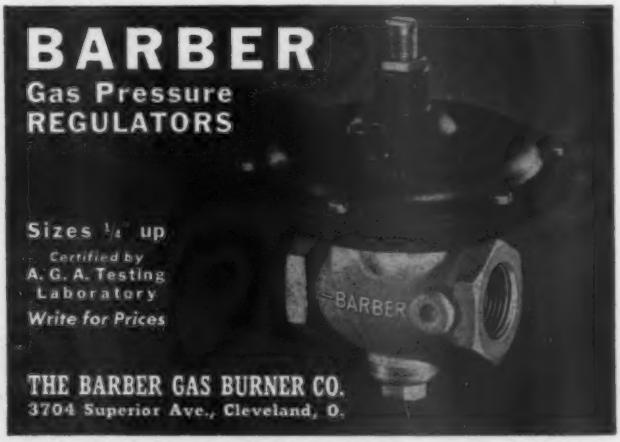
Typical equipments for various drilling depths are listed for both a-c and d-c drilling, and their maintenance and care are discussed. Also included is a section on auxiliary equipment required on drilling rigs.

For a copy write the company at East Pittsburgh, Pa.

Temperature Recorders and Controls. The Bristol Company, Waterbury, Connecticut, has published a series of bulletins covering automatic control and recording instruments for industrial furnaces, dryers, kilns, and ovens. These have been bound together in loose leaf form in order that additions and revisions may be easily inserted.

The binder set covers pyrometer recorders and controllers, thermometer recorders and controllers, humidity recorders and controllers, draft controllers, control valves and accessories.

The bulletins included are well illustrated with photographs, application drawings, and wiring diagrams.



CLEVELAND

"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS

Cleveland Gas Meter Co.

2180 East 65th St., Cleveland, Ohio ESTABLISHED 1895

Dust Scrubbing

(Continued from page 36)

ing from 35 to 39 degrees A.P.I., and a vapor pressure of 1 m.m. or less.

18 Foot Separator

The special liquid separator installation at the Southern California Gas Co.'s Brea Station is also built of 26 O.D. Pipe, 5/16 wall. The length of the unit is 18 ft. 11½ in. Near the outlet end of the bottom of the separator is a catch basin 10 in. in diameter. The basin is connected by piping to a sludge tank, thus completing the oil circuit back to the scrubber.

The bottom of the separator, for obvious reasons, is higher in elevation than the oil level in the scrubber by an amount greater than the differential established by the difference between the pressure in the oil chamber of the scrubber and that in the bottom of the separator. This insures a liquid seal between the two units and prevents the oil from blowing out of the scrubber into the separator and thence into the outlet pipe.

Since it was estimated that this differential might be as great as 14 inches of water, the separator was elevated 28 inches. Tests have indicated that the differential at the Brea unit will be considerably less than 14 inches, although the full volume for which it is designed has not yet been carried.

The dual unit was designed by J. B. Reddick of the Southern California Gas Co.'s technical staff and was installed by company personnel under the direction of H. P. George, general superintendent of the Production-Transmission Department.

Home Service in War Time

(Continued from page 20)

well as decreased consumer-product advertising, Mr. Jones outlined the various educational and technical advises which Home Service girls are giving to consumers in all walks of life: to housewives, to war workers, and to innumerable local canteen and nutrition councils all over the country who are supervising school lunches and need technical advice and directions on nutritious menus.

These increased opportunities to serve, Mr. Jones explained, have been created by wartime food problems and food rationing; by the need for making food — and appliances last longer, and by the new need among well-to-do women whose maids have left them for defense work—for advice on food problems and care of appliances. This last group, he emphasized, is an opportunity that is "brand new today for the gas industry to tell a story of goodwill and of service to a group of people too infrequently met in the past."

Servel Sponsors Saturday Morning Radio Program

Gas Companies Co-Operate in "Fashions in Rations" Information Radio Show

An informative radio program on the most talked of, and most vital, topic of the day—food and rationing, will be presented to the radio audience on a Columbia Broadcasting System coast-to-coast hookup by Servel, Inc., peacetime manufacturers of gas refrigerators. Gas companies will participate via a "cut in" permitting the local Home Service Director to bring to the listeners the latest news on fresh vegetables and other available foods in her territory.

Each week there will be an official digest of the week's food news from Washington. This material will be broadcast by a government representative. Another feature will be a prominent speaker who will have an important message every Saturday morning for the listeners.

The Servel-Gas Companies' half hour program entitled: "Fashions in Rations," will be on the air on Saturday mornings beginning April 3, at 11:30 o'clock Eastern War Time; 10:30 Central War Time; 9:30 Mountain War Time, and 8:30 Pacific War Time.

Miss Billie Burke, the beloved American actress, will furnish the entertainment. Miss Burke will play the part of a rationed perplexed housewife, and in one break in the program will interview an outstanding woman selected from American housewives who have made some unique contribution to homemaking in connection with the war effort. This homemaker will be given a war bond for her appearance.

Billie Burke, the star of Servel's new radio program, "Fashions In Rations," every Saturday morning, beginning April 3, on WABC coast-to-coast hookup.

Alice White, Servel's food advisor, will make her debut on this program. She will be interviewed by Miss Burke and answer questions of current interest in food, rationing, food preparation and preservation.

The local Home Service Directors who participate in the program will be in a position to invite listeners to visit the Home Service departments of the local gas companies where assistance can be obtained in solving problems of meal preparation and home making. The radio show is part of Servel's Home Volunteer Program now in operation in more than 450 gas companies cooperating with county nutrition committees.

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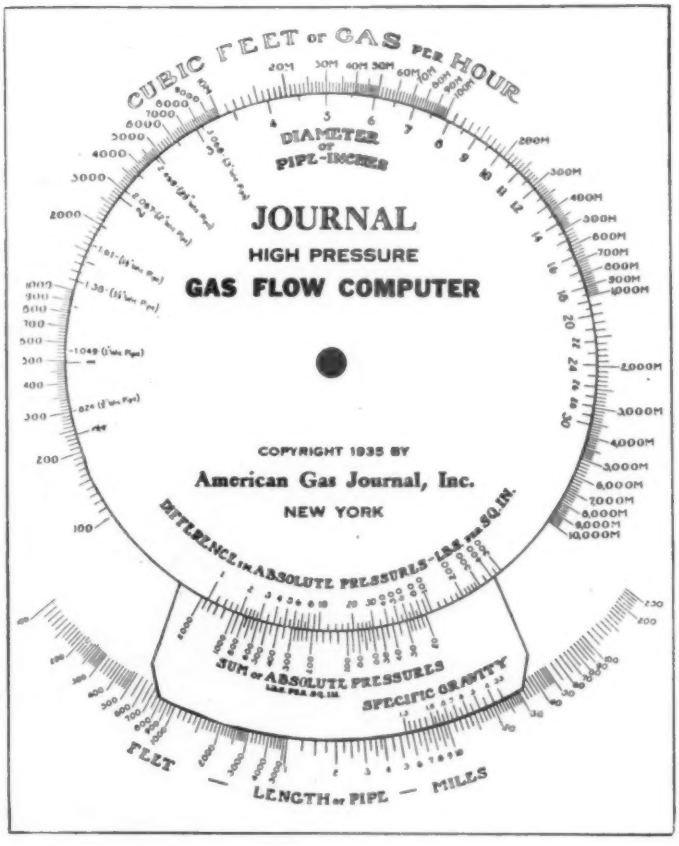

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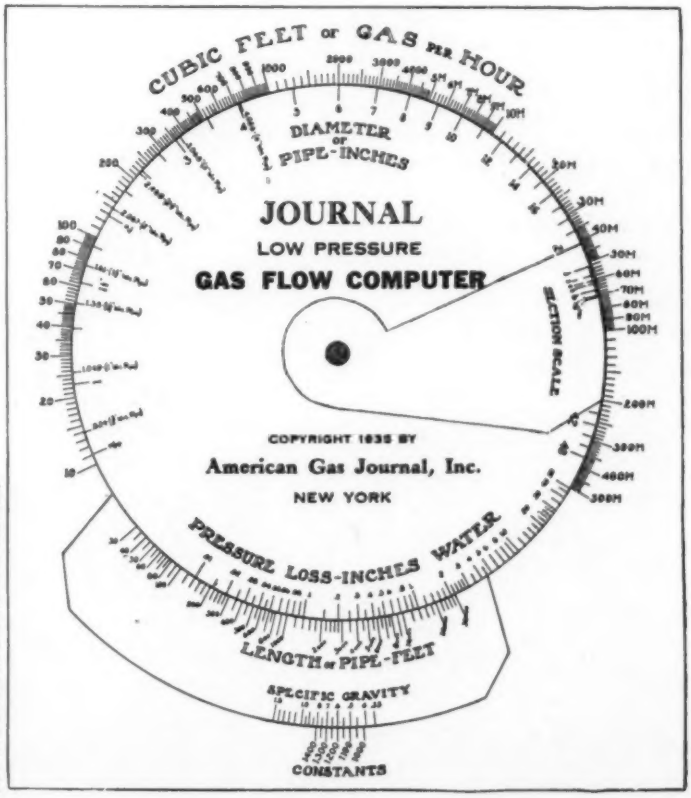

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